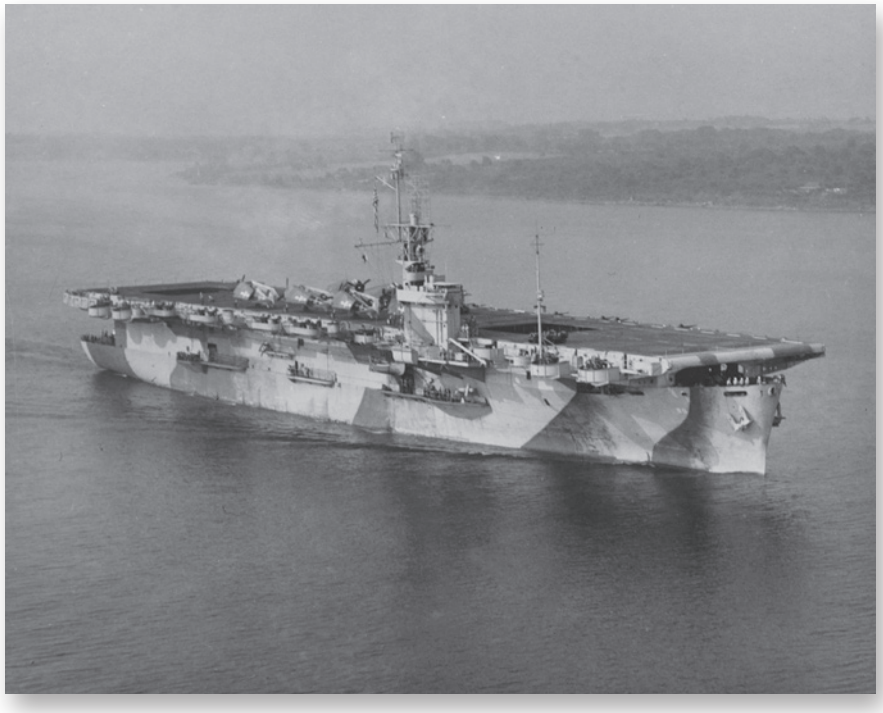
US NAVY ESCORT CARRIERS 1942–45

MARK STILLE

ILLUSTRATED BY PAUL WRIGHT

NEW VANGUARD 251

US NAVY ESCORT CARRIERS 1942–45



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US NAVY ESCORT CARRIERS 1942–45

INTRODUCTION

This book covers the many escort carriers used by the United States Navy (USN) in all theaters during World War II. The contributions of these ships were enormous but have been largely overlooked. In the Atlantic, they provided the backbone of the USN's antisubmarine warfare (ASW) efforts, which finally and irrevocably turned the tide of the war against the U-boats in 1943. In the Pacific, they provided air cover and ground support for a series of amphibious operations which led to the doorstep of Japan by 1945. These cheaply built ships were deployed in large numbers and faced submarine, air, and even surface threats from the Japanese, but proved able to contend with everything thrown their way. Though unprotected, deficient in antiaircraft defenses, and capable of carrying only a limited number of aircraft, escort carriers performed invaluable service in both the Atlantic and the Pacific.

THE RISE OF THE ESCORT CARRIER

The USN had explored the concept of a small aircraft carrier ever since the period immediately following the Washington Naval Treaty in 1922. There was serious consideration given to building a hybrid cruiser-carrier known as a "flying deck cruiser." This concept never came to fruition, as traditional carriers and cruisers were judged to be more valuable. However, another concept proved to be more prescient. This called for the conversion of ten passenger ships into carriers in time of war. Passenger liners were best suited for this conversion since they could usually reach high speeds and were larger than regular merchant ships. When conflict came, the USN did not use passenger liners as the basis for complex carrier conversions, but did use regular merchant hulls as the basis to quickly and cheaply build what became known as escort carriers.

The impetus to convert merchant ships into small carriers was the war in Europe. The German U-boat threat to trans-Atlantic convoys was apparent, and a small carrier dedicated to convoy escort seemed a worthy investment. However, the USN was resistant to the notion of building and employing conversions of patently inferior small carriers with a limited aircraft capacity and little or no protection from attack.

The driving force behind the idea of what would become escort carriers was none other than US President Franklin D. Roosevelt. He had been Assistant Secretary of the Navy in World War I and saw himself as an insightful observer of the USN and its needs. In late October 1940, he directed the Chief of Naval Operations to acquire a merchant ship for conversion into an aircraft carrier. Roosevelt had an austere conversion in mind, which was in direct contradiction to what the Navy wanted. The ship to be converted had to be between 6,000 and 8,000 tons, have a top speed of not less than 15kts, and had to be able to carry between eight and 12 helicopters or aircraft. The carrier-to-be was viewed as an asset for convoy escort. It is noteworthy that Roosevelt also intervened in another carrier matter with the Navy by directing that nine Cleveland-class light cruisers be converted into light carriers against the wishes of the admirals. Both his escort carrier and light carrier directives resulted in the creation of important building blocks for the USN.

Pushed into action, the USN decided to obtain two C-3 type merchant ships for conversion. It was still obvious that the Navy did not fully understand Roosevelt's concept when it stated it needed 18 months to convert the ships into carriers. Roosevelt gave them three months. A proposal on January 17, 1941 was accepted by Roosevelt and the first ship slated for conversion, *Mormacmail*, was selected and scheduled to be available on March 1. A second ship, *Mormacland*, was also set for conversion and subsequently assigned to the British Royal Navy (RN).

A note should be made on the changing designation of these small carriers, which reflected their growing acceptance by the USN. They were initially designated aircraft transports (APV), and then as general-purpose aircraft tenders (AVG) on March 31, 1941. In August 1942, this was changed again to auxiliary aircraft carrier (ACV). The final designation was approved in July 1943 – CVE (escort carrier). To many of their crewmen, this really stood for Combustible, Vulnerable and Expendable. The naming convention for these ships used bays, rivers, famous battles fought during the war, and in one instance (*Block Island*), the name of an escort carrier lost earlier in the war.

When first commissioned, *Long Island* had a short 362ft flight deck as is evident in this July 8, 1941 view. The carrier's original air complement consisted of F2A fighters (two of which are parked at the forward end of the flight deck) and SOC-3A scout-observation aircraft. Note the flight deck markings on the bow and stern of "LI." The ship is painted in Measure 1 camouflage, with heavy weathering evident on the hull. (Naval History and Heritage Command)

THE EVOLUTION IN ESCORT CARRIER DESIGN

The evolution of the CVE was interesting. It began as a ship that the USN did not want, mainly because of its austere capabilities. Once in service, the value of having a large number of small carriers was immediately evident and the escort carrier gained a measure of grudging approval. By the end of the war, the CVE had been produced in enormous numbers and had recorded impressive combat records in the Atlantic and the Pacific theaters.

The first escort carrier conversion was completed on June 2, 1941, just within Roosevelt's directed three-month time scale. The ship was commissioned as *Long Island*. To meet the deadline, the conversion was austere. A 362ft flight deck was placed over a small hangar. The ship had no island, only a single elevator aft and a catapult forward. Her diesel engines generated a top speed of just under 17kts. Trials indicated that the short flight deck was inadequate, and the ship returned to the yards for the addition of another 77ft. *Long Island*'s sister ship was completed as HMS *Archer* and handed over to the RN. The only difference was that she received a small island on the starboard side.

The British were desperate to get more aircraft to sea in a convoy escort role, so they ordered another four repeat *Long Island*-class ships. These were also based on the C-3 merchant ship, but had a slightly longer 440ft flight deck. One of these, *Charger*, was returned to the USN in March 1942.

Not surprisingly, *Long Island* was found to be operationally limited. The main requirements for the next class of escort carriers were a longer flight deck, a second elevator, and additional antiaircraft armament. The next escort carrier design, still based on the C-3 merchant ships, addressed many of these shortcomings.

The Sangamon class of escort carriers was an anomaly in early war escort carrier design. This class of only four ships was based on a tanker

Casablanca, on the right, about to be launched at Henry J. Kaiser's shipyard in Vancouver, Washington, on April 5, 1943. Two of her 49 sister ships are under construction on the left. *Casablanca*'s commissioning was delayed until July. By July of the following year all 50 Casablanca-class escort carriers were in service. (Naval History and Heritage Command)

Puget Sound photographed at anchor in Tokyo Bay, Japan, in October 1945. This view shows the characteristics of a Commencement Bay escort carrier with its large tanker-like hull, enlarged island, and heavy antiaircraft armament. After only a few months of service, the ship was decommissioned in October 1946 and was never recommissioned. (Naval History and Heritage Command)

hull, which, since it was much larger than a C3 merchant hull, provided the basis for a much better balanced design. These ships possessed much greater endurance, were more stable, and could carry more aircraft than the earlier designs. Had more tanker hulls been available, this is the class the USN would have preferred to build in large numbers.

The next class was a return to a smaller conversion mounted on a merchant hull. Again, President Roosevelt was involved in the design process. Henry J. Kaiser, a well-known shipbuilding magnate, proposed to Roosevelt an escort carrier capable of 20kts that could be built quickly and cheaply. Roosevelt was quick to agree and in June 1942 called members of the USN's Bureau of Ships and the Maritime Commission (responsible for merchant construction) to the White House to tell them of his desire to build Kaiser's carriers.

Further meetings confirmed that the design was generally unsatisfactory, but since this was beside the point, planning continued. The S4-S2-BB3 merchant hull was selected and series production of 50 ships ordered. The first ship, *Casablanca*, was delivered well behind schedule in July 1943, but Kaiser delivered on his promise and finished all 50 ships by July 1944 in a tremendous achievement of industrial organization. The ships were viewed by the Navy with initial suspicion, but turned out to be timely additions to the fleet.

The final class of escort carriers represented a return to the larger and more capable Sangamon design, incorporating lessons learned in escort carrier operations thus far in the war. Improvements included better aircraft handling facilities, a larger island, and an improved armament suite. The design was approved in December 1942 and 23 ships were authorized, but the first ship, *Commencement Bay*, was not commissioned until late November 1944. Only a few of the ten ships commissioned before the war's end saw any action, but these ships went on to serve after the war and into the 1950s in a variety of roles.

General Motors FM-2 Wildcat fighters from *White Plains* fly an escort mission, probably during air strikes on Japanese facilities on Rota Island in the Marianas on June 24, 1944. The Wildcat was the standard escort carrier fighter (except for the four Sangamon-class ships), while the more effective F6F Hellcat was allocated to light and fleet carriers. (Naval History and Heritage Command)

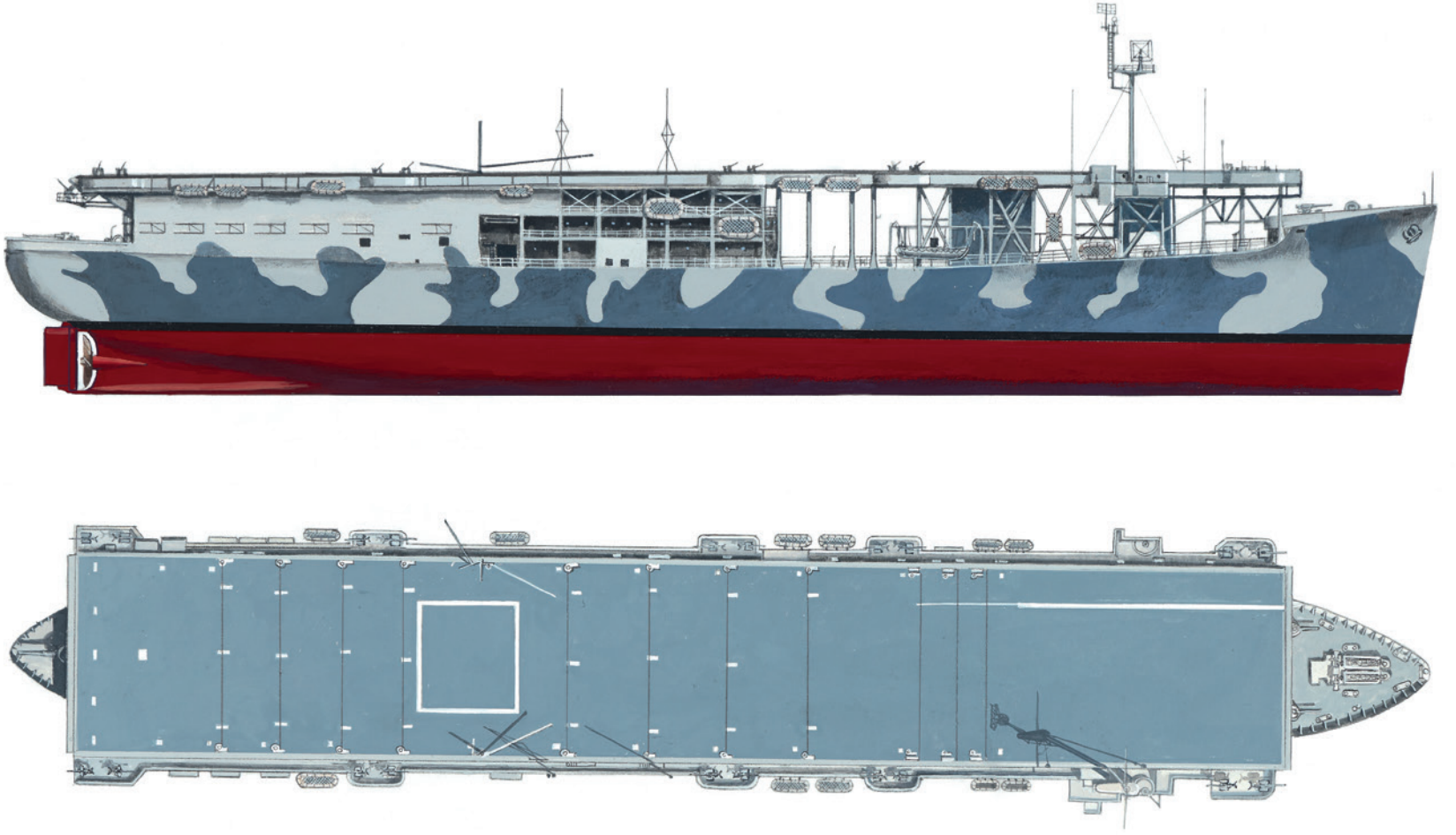
ESCORT CARRIER AIR GROUPS

Because of their limited size, both on their flight and hangar decks, escort carriers carried a finite number of aircraft. This meant that to be effective, they had to operate in groups. Initially, escort carriers were organized into carrier divisions of three ships, and when more escort carriers became available, this increased to four ships. Escort carriers embarked the same types of aircraft as fleet carriers, with one major exception. The standard escort carrier fighter was the Grumman F4F Wildcat. The later FM-2 version was designed for escort carrier operations since it was lighter, mounted a more powerful engine, and had a taller vertical stabilizer to counteract the torque from the bigger engine. The larger, more powerful Grumman F6F Hellcat was also embarked on escort carriers, but almost always the larger Sangamon-class ships. The primary strike aircraft aboard escort carriers was the reliable and sturdy TBF/TBM Avenger, which could carry a large payload of torpedoes, bombs, or depth charges. Fleet carriers embarked a squadron of dive-bombers, which was the famous Douglas SBD Dauntless up until 1944.

A

THE FIRST ESCORT CARRIER

These starboard side and overhead profiles of *Long Island* depict her in August 1942 while operating in the Solomons. The merchant ship origin of this conversion is unmistakable. The flight deck has been placed over the merchant hull, and even after additional work in the fall of 1941, does not yet extend to the ship's bow. The forward part of the hangar is open. The carrier does not possess an island; navigation was performed from the bridge wings in the area of the radar mast, which carries an SC radar and a YE aircraft homing beacon. This overhead view gives a clear perspective of the ship's armament, which includes a single 5in/51 gun on the stern, two 3in/50 single guns on the bow, and 20 single 20mm guns placed around the flight deck. The ship is in Measure (Ms) 12 Modified, which called for vertical surfaces to be broken up by large splotches of paint. Horizontal surfaces were painted deck blue.



A TBM Avenger makes the first takeoff from the newly commissioned *Salamaua* during her shakedown cruise off the West Coast on July 1, 1944. The Avenger proved to be the outstanding carrier-based strike aircraft of the war and excelled in a variety of roles operating from escort carriers. (Naval History and Heritage Command)

This aircraft did not have folding wings, which made it difficult to fit aboard escort carriers. The USN treated the Sangamon class as mini-fleet carriers, as shown by the fact that they carried Dauntless dive-bombers until mid-1944.

The Sangamon-class ships were considered large enough to carry Air Groups, each initially and usually consisting of two squadrons. One squadron was equipped with 12 to 14 fighters and the other with a mix of nine Avengers and nine Dauntlesses. The Hellcat replaced the Wildcat on most of these ships, and by mid-June 1944 the dive-bombers were removed. In October 1944, these ships embarked an air group of up to 24 fighters and nine Avengers. During the Okinawa campaign, they carried 18 Hellcats and 12 Avengers.

Bogue and Casablanca-class ships carried a similar number of aircraft but these were organized into Composite Squadrons (VC). For their ASW operations in the Atlantic, Bogue-class ships initially embarked a fighter-heavy mix of 12 Wildcats and nine Avengers. In May 1943, this was reversed to 12 Avengers and nine Wildcats, which made for crowded conditions. Later in 1943, this was changed again to 12 Avengers and only six fighters.

The Casablanca-class ships also embarked a composite squadron of Avengers and Wildcats. The standard organization called for 16 fighters (FM-2 Wildcats) and 12 TBM Avengers. This number could fluctuate depending on operational and combat losses and the availability of replacement aircraft.

Air Groups and Composite Squadrons were rotated regularly on escort carriers since the high tempo of operations caused combat fatigue

Escort carrier hangar decks were cramped, as seen in this view aboard *Long Island* in which crewmen are spotting a Grumman F4F Wildcat fighter on June 17, 1942. Several other F4Fs are present; the bi-planes are Curtiss SOC-3A Seagull scout-observation aircraft. (Naval History and Heritage Command)

Card underway in the Atlantic on June 15, 1943. On her flight deck are six F4F Wildcat fighters and seven TBF/TBM Avenger torpedo bombers – over half of her total complement. The carrier has been upgraded with an SK radar on her mast. *Card* is wearing the Ms 22 camouflage scheme, which was the preferred Atlantic measure in the mid-war period. (Naval History and Heritage Command)

necessitating regular turnover. As many as 22 Escort Carrier Air Groups and 84 Composite Squadrons were formed during the war. Many of the USN's escort carriers were never deployed on combat duties, so many never embarked an operational air capability.

ESCORT CARRIER WEAPONS AND RADAR

The excellent 5in/38 dual-purpose gun was the largest weapon embarked aboard USN escort carriers. Situated on the stern of the Bogue, Casablanca, and Commencement Bay classes, it was intended to provide minimal protection from surface attack. The Casablanca-class ships of Task Group "Taffy 3" were the only USN carriers during the war to use their main battery in an antisurface role in October 1944.

USN Escort Carrier Weapons

Type	Muzzle Velocity (ft/sec)	Max Range (yds)	Rate of Fire
5in/38	2,600	18,200	15–20rds/min
40mm Bofors	2,890	11,000	160rds/min
20mm Oerlikon	2,740	4,800	450rds/min

Mess attendants manning a 20mm single gun mount on *Copahee* on September 9, 1942. This gun was the most numerous aboard all escort carriers since it was lightweight, could be bolted alongside the flight deck, and required no external power. At this point in the war, *Copahee* was involved in ferrying aircraft to the South Pacific. (Naval History and Heritage Command)

Throughout almost the entire war, until the introduction of the Commencement Bay class nearly at war's end, USN escort carriers possessed inadequate antiaircraft capabilities. In the Atlantic, where there was virtually no threat of German air attack, this shortcoming was not a problem. However, in the Pacific, it was an increasing problem and became acute after the introduction of kamikaze attacks in late 1944. The first escort carriers commissioned carried a mix of quadruple 1.1in mounts and 20mm single mounts. The quad 1.1in weapon was unreliable in service and was quickly shown to be inadequate against air attack. During the fierce Pacific battles of

This view of the island of *Breton*, taken at Mare Island Navy Yard on March 6, 1944, shows the typical electronics fit of an escort carrier. The large antenna is for the SK air search radar. Above that is the small parabolic SG surface search radar and the YE aircraft homing radar on top of the mast. (Naval History and Heritage Command)

1942, the 40mm and 20mm guns demonstrated their effectiveness against conventional Japanese air attack and became the standard antiaircraft weapons for all escort carriers. The quadruple 40mm mount was preferred, but its weight made it difficult to fit on escort carriers without causing stability problems. The twin 40mm mount was more easily fitted because of its reduced weight, and it became the standard intermediate range antiaircraft weapon on escort carriers. The late-war Commencement Bay class was large enough to receive three quad 40mm mounts and 12 twin 40mm mounts, making it the first escort carrier to possess an adequate antiaircraft fit. By this period of the war, the kamikaze threat was extremely serious and heavier weapons such as the 40mm gun were required to destroy the planes before they hit the ship. Even the 40mm gun proved only marginally successful in breaking up suicide aircraft, but the more powerful 5in/38 dual-purpose gun was too large and heavy to fit in significant numbers aboard escort carriers. Supplementing the 40mm guns were single 20mm guns, which every escort carrier fitted around its flight deck. These weapons provided a last-ditch defense against air attack with their short, effective range and limited hitting power.

Escort carriers were fitted with a limited radar suite compared with fleet carriers, but when they were available all escort carriers carried surface search and air search radars. Ships commissioned early in the war were fitted with the SC/SC-1 radar, which was used against surface and air targets. Beginning in 1943 with ships of the Casablanca class, the SC/SC-1 was replaced with the more powerful SK air search radar, which could theoretically detect large targets at up to 100nm flying at 10,000ft. The improved SK-2 radar with its distinctive round antenna was fitted to the last eight ships of the Casablanca class and all Commencement Bay-class ships. As their primary surface search radar, escort carriers were fitted with the SG radar. The improved SG-1 entered service in May 1943. Depending on conditions, this radar could detect a large surface target at up to 22nm.

ESCORT CARRIERS AT WAR

The Atlantic Theater

Operation *Torch*

The first escort carriers to see action in the Atlantic Theater were the four ships of the Sangamon class. These were hurried to be completed so they could take part in the invasion of French Morocco as part of the Western Naval Task Force of Operation *Torch*. The invasion was pushed back until November 8, 1942, which barely gave time for the four Sangamon-class ships to be commissioned and conduct short sea trials with their inexperienced air groups. The only fleet carrier available to support the invasion was *Ranger*,

Santee photographed during Operation *Torch* in November 1942. On the left side of the flight deck are Douglas SBD-3 Dauntless scout-bombers with their non-folding wings, which made them difficult to operate aboard escort carriers. To the right are Grumman F4F Wildcat fighters. Note the yellow Operation *Torch* markings visible around the fuselage stars of some of these airplanes. (Naval History and Heritage Command)

so the roles of *Sangamon*, *Santee*, *Suwannee*, and *Chenango* were vital. The first three escort carriers were given combat roles, but *Chenango* was used as a ferry to deliver 78 P-40F fighters to newly captured airfields.

On November 8, *Sangamon* and *Chenango* headed for the Port Lyautey area, *Ranger* and *Suwannee* to Casablanca, and *Santee* for Safi. Aboard the three combat escort carriers were 99 aircraft – a mix of fighters, dive-bombers, and torpedo aircraft. The landings went off on schedule despite the rough surf. The three escort carriers were very busy until French resistance ceased after three days of sharp fighting. Aircraft from *Suwannee* attacked French naval units in Casablanca on the first day and on the following day sank the French submarine *Sidi-Ferruch*. *Sangamon* encountered the most resistance when her air group pounded the airfield at Port Lyautey. All three carriers conducted ground support missions. By the time of the French surrender, the escort carriers had flown 582 sorties for the loss of 29 aircraft. In their first battle, the escort carriers came off well except for the need to increase aircrew training. Operating as de facto fleet carriers, a role they were not designed for, the escort carriers demonstrated their versatility.

The Convoy Battles of 1943

The first USN escort carrier committed to the defense of Atlantic convoys arrived just as the tide of the war against the U-boats was turning in the Allies' favor. The USN Atlantic Fleet's original intent was to use its escort carriers in the Central Atlantic. However, the first escort carrier to arrive, *Bogue*, was used in the North Atlantic in defense of convoys SC-123 and HX-235. *Bogue* and her air group VC-9 had no success on their March and April operations, but in May, in support of convoy ON-184, their luck changed. Beginning on May 21, aircraft from *Bogue* damaged three U-boats and sank *U-569*. In another deployment which began on May 31, *Bogue* and VC-9 damaged two more German submarines and sank *U-217* and *U-118*.

On June 12, 1943, a surfaced German U-boat was discovered only 20 miles from *Bogue*. Two Wildcats opened the assault on *U-118* with strafing attacks and then an Avenger dropped four depth charges. Eventually, eight *Bogue* aircraft made attacks. This was the third of *Bogue*'s record 12 U-boat kills. (Naval History and Heritage Command)

The reasons for these early successes were many. The newly established Tenth Fleet, exercising operational control of the escort carriers, made excellent use of Enigma intercepts, which meant *Bogue* and her destroyer escorts were placed in an area where contact with U-boats was likely. At this point of the war, U-boats spent most of their time on the surface, so *Bogue*'s air patrols came into regular contact with U-boats massing for attacks on convoys. The entire scheme of German Admiral Karl Doenitz was to move enough U-boats against a convoy to overwhelm its defenses. This required constant reports from the submarines on their own locations as well as that of the convoys. These transmissions were picked up and read by Enigma decoders, and were often geo-located by the direction-finding system aboard *Bogue* and other ships. The early success of *Bogue* demonstrated the effectiveness of the escort carrier combined with excellent tactical intelligence.

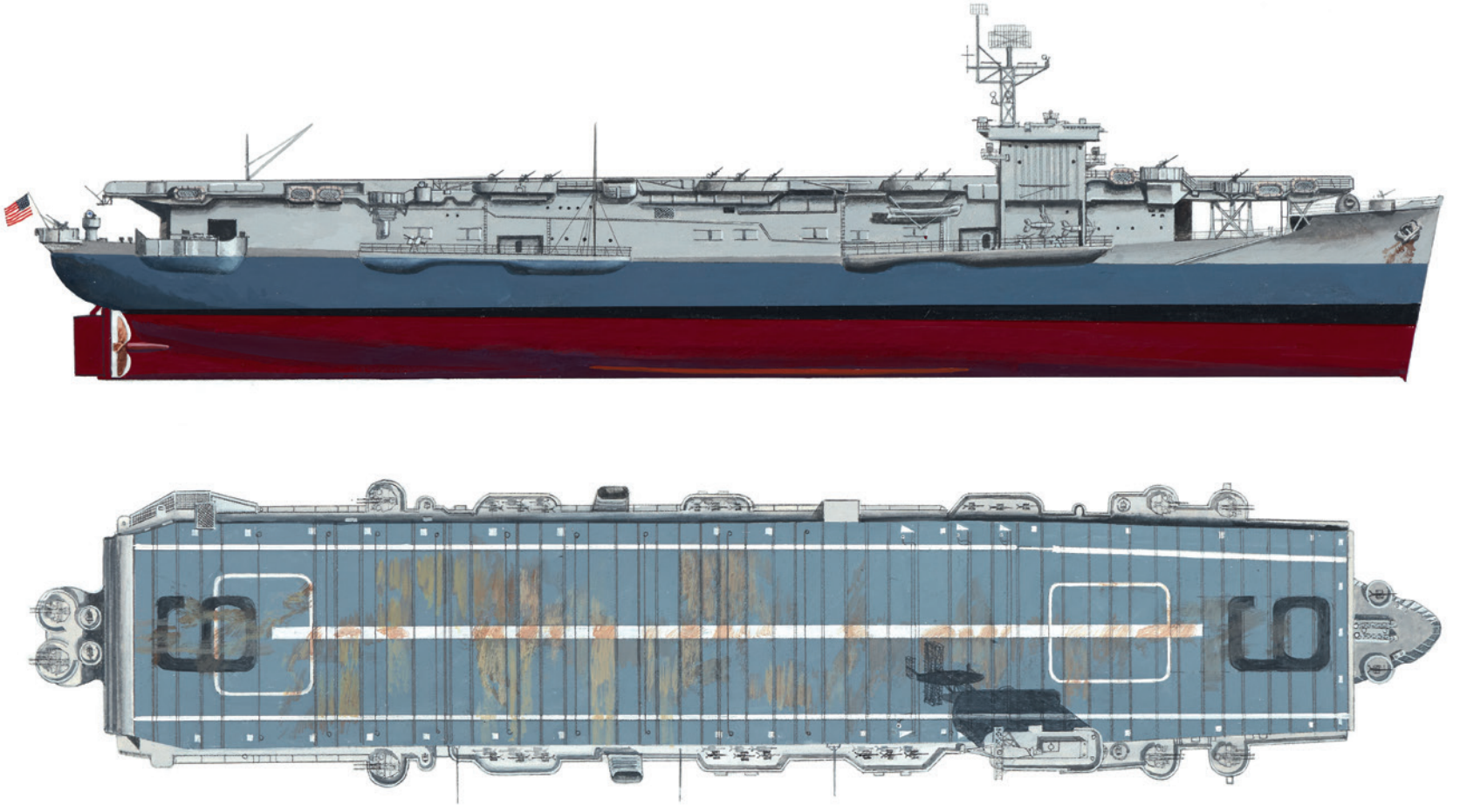
In June 1943, Doenitz shifted the focus of U-boat operations to the Central Atlantic. This was right into the teeth of the USN's escort carrier operating area. *Core* and *Santee* were the first to benefit from this situation. In four days, between July 13 and 16, the two carriers sank four U-boats (*U-487* on July 13, *U-160* on July 14, *U-509* on July 15, and *U-67* on July 16). On July 30, *Santee* sank *U-43* southwest of the Azores. Increasingly, the escort carriers were freed from direct protection of a convoy to expand their operations to go after known locations of U-boats provided by Enigma intercepts. *Bogue* returned to action in July and accounted for two U-boats on the 23rd (*U-613* and *U-527*, with the former actually being accounted for by one of her destroyer escorts).

Card joined the fray in August and experienced immediate success in her debut. By the end of the month, she and aircraft from VC-1 accounted for four U-boats sunk (*U-117*, *U-664, U-525*, and *U-847*). Also active during the month was *Core*, which sank two U-boats on August 24 (*U-185* and *U-84*). This period saw the expanding use of the Mk-24 mine, which was the world's first homing torpedo. Avengers would force the U-boat to submerge with 500lb bombs and then dropped an Mk-24 for the kill.

B

THE BOGUE CLASS

Bogue was the USN's top-scoring escort carrier against German U-boats. The ship was the lead unit in a class of 11 escort carriers built for the USN. This conversion was based on the same merchant hull as *Long Island* but featured a small island and a fully enclosed hangar. The ship is shown in these 1943 profiles in the Ms 22 scheme. This graded system consisted of navy blue applied to the hull, with all remaining vertical surfaces and masts painted in haze gray. Horizontal surfaces were painted in deck blue. The ship has been fitted with the SK radar, replacing the original SC radar, and retains the SG set and the YE homing beacon. *Bogue* retained this configuration for the remainder of war. The standard Bogue-class armament fit is evident in the overhead view. Eight twin 40mm mounts are visible, with two on the stern and six along the flight deck. There are also 20 single 20mm guns evident, with two on the bow and the other 18 arrayed along the flight deck. This weapons fit remained unchanged during the war. One of the two single 5in/38 guns is visible on the side profile.



Core underway in the Atlantic, probably on October 10, 1943. The carrier conducted three deployments during 1943 and sank five U-boats. Note the Avengers on the flight deck which are painted white and gull gray to make them more difficult for U-boat look-outs to spot in a clear sky. The ship is wearing the Ms 22 scheme. (Naval History and Heritage Command)

In September, Doenitz returned to the North Atlantic in strength, leaving the USN escort carriers in the Central Atlantic with few targets. In October, the USN ASW offensive in the Central Atlantic resumed. *Card* led the way with four confirmed kills (*U-460, U-422, U-402*, and *U-584*). On October 4, an Avenger sighted four submarines just 15 miles ahead of the carrier. The group comprised a refueling U-boat and three standard Type VIIC boats. The tanker U-boat was sunk as was one of the Type VIIs. *Core* claimed *U-378* on October 20, and *Block Island* made its first kill (*U-220)* on October 28.

For the last two months of 1943, *Card* claimed another two submarines (*U-405* and *U-645*) by her escorts and *Bogue* another three (*U-86*, *U-172*, and *U-850*) by her new air group (VC-19) and her escorts. The escort carriers had proven to be game-changers in the Battle for the Atlantic, and when combined with Enigma-derived intelligence formed a real offensive threat to Doenitz's U-boats. In 1943, five escort carriers scored victories led by *Card*'s ten and *Bogue*'s eight.

The Battle is Won in the Atlantic, 1944–45

In 1944, more USN escort carriers entered the campaign, including the first Kaiser-built ships. Accompanying the carriers were war-built destroyer escorts which replaced the prewar flush deck destroyers.

The first Kaiser-built ships to see combat were *Mission Bay* and *Guadalcanal*. *Guadalcanal* scored quickly, sinking *U-544* on January 16, 1944. This deployment was also noteworthy as it featured the first use of rockets launched from an Avenger. *Guadalcanal* went on to compile a fine war record. On April 9 and 10, she sank *U-515* and *U-68*. In June, she led her task group of a destroyer and four destroyer escorts into the Central Atlantic, where Enigma-derived information indicated *U-505* was operating. On June 4, one of her escorts detected the submarine on sonar and an ensuing series of attacks forced it to the surface. Boarding parties were sent over to capture the submarine and it was towed by *Guadalcanal* to Bermuda, arriving on June 19. This was the only German U-boat captured by the USN during the war. *U-505* remains on display in Chicago to this day.

In general, the Kaiser-built ships were not able to handle sea conditions in the Atlantic as well as the Bogue class. Admiral Ingersoll, commander of the Atlantic Fleet, requested that Kaiser ships not be sent to the Atlantic. Accordingly, most of the Casablanca-class ships were sent to the Pacific. *Tripoli*, *Solomons*, and *Wake Island* made brief combat appearances in the Atlantic, and only *Mission Bay* was active in combat operations through to the end of the war. On June 15, aircraft from *Solomons* sank *U-860* for her only kill; *Wake Island*'s only kill came on July 2 against *U-543*. *Mission Bay*'s task group accounted for another two submarines during the war – *U-1062* on September 30 and *U-881* on May 6, 1945.

The most active escort carrier of early 1944 was *Block Island* which, with her embarked air group (VC-6) and attached escorts, sank *U-709* and *U-603*

Block Island underway on February 3, 1944 with Avengers of VC-6 on the flight deck. Note the SG radar on the forward edge of the mast and the SK air search radar fitted above. Two additional 20mm single guns have been fitted on the sponson below the island, bringing the ship's total to 24. (Naval History and Heritage Command)

on March 1, and then *U-801* on March 17 and *U-1059* two days later. On May 6, *Block Island*'s task group encountered *U-66*, which resulted in a close-range action with destroyer escort *Buckley* during which some of the U-boat crew attempted to board the American ship. The submarine did not survive the action. *Block Island*'s brief but spectacular career came to an end on May 29, when *U-549* slammed three torpedoes into the carrier. The ship was beyond salvage and quickly sank, but only six men were lost. *U-549* was sunk the same day by the carrier's escorts. *Block Island* was the only USN escort carrier sunk in the Atlantic.

Bogue continued to enjoy success into 1944, sinking *U-575* in March, *RO-501* (the former *U-1224* en route to Japan with a Japanese crew) in May, the Japanese *I-52* en route to Europe on June 24, and *U-1229* on August 20 for her last kill. *Bogue* was the top-scoring USN escort carrier of the Atlantic War. Other carriers scoring in 1944 included *Croatan*, with four U-boats (*U-856* and *U-488* in April, *U-490* in June, and *U-154* in July); *Card* sunk *U-233* in July.

The only escort carrier operations in the Mediterranean were in support of the invasion of southern France in August 1944. *Tulagi* and *Kasaan Bay* embarked a total of 56 F6F Hellcat fighters (including eight night fighters) and five Avengers to provide air cover and ground support for the invasion. Operating with seven Royal Navy escort carriers, the two USN escort carriers got the job done, losing 11 Hellcats but claiming eight German aircraft and over 800 German vehicles destroyed.

Guadalcanal seen here while steaming off Hampton Roads, Virginia, on September 28, 1944. Aircraft visible on her flight deck include 12 TBM Avenger torpedo bombers and nine FM-2 Wildcat fighters, which was the entire complement for a Casablanca-class carrier operating in the Atlantic during this period. *Guadalcanal* is wearing the Ms 32/4A scheme. (Naval History and Heritage Command)

In 1945, submarines were getting hard to find in the operating areas of USN escort carriers, since Doenitz had pulled most of his U-boats back to areas closer to northern Europe. Those submarines still in the Atlantic increasingly used snorkels, which reduced their time on the surface, thus making them harder to detect. Lack of contact with U-boats meant most escort carriers spent the winter of 1944–45 on training or ferrying duties. In a last-ditch effort in 1945, Doenitz sent six U-boats to attack targets off the US East Coast, giving the escort carriers a final chance to practice their ASW skills. Using Enigma-derived information, *Croatan* scored heavily in April, sinking three submarines (*U-1235*, *U-880*, and *U-518*) between April 15 and 21. *Core* scored her last kill on April 24, sinking *U-546*.

Atlantic Submarine Sinkings and Captures by USN Escort Carriers (including by escorts)	
Bogue	12
Card	11
Croatan	7
Block Island	7
Core	6
Guadalcanal	4
Santee	3
Mission Bay	2
Solomons	1
Wake Island	1

The role of the escort carriers in the Atlantic campaign, while important, must be placed in perspective. Of the 785 U-boats sunk, only 177 were dispatched by US forces. Of these, the escort carriers sank 53 and captured one. Escort carriers did not win the Battle of the Atlantic, but clearly they were an important contribution to winning the longest campaign of the war.

The Pacific Theater

Heavy losses to USN fleet carriers in 1942 forced the early introduction of escort carriers to the front lines. After transferring from the Atlantic, *Long Island* operated with the old battleships of Task Force 1, which was tasked to protect the US West Coast in the months following Pearl Harbor. In August, *Long Island* moved into the South Pacific and was used to transfer Marine aircraft to Guadalcanal.

Following their North African exploits, *Sangamon*, *Suwannee*, and *Chenango* were sent to the Pacific in December. *Chenango* and *Suwannee*

C

GUADALCANAL AND *U-505*

Guadalcanal and her escorts fought one of the most storied actions in USN history when they tracked, attacked, and then boarded German Type IX U-boat *U-505* off the Azores on June 4, 1944. When the U-boat broached following a series of attacks by the escorts, *Guadalcanal*'s commanding officer, Captain Daniel V. Gallery, had a plan ready to capture the submarine. After the German crew abandoned their boat, an American boarding party entered the sinking U-boat to begin salvage operations. The condition aboard the boat was stabilized, and soon *Guadalcanal* began to tow the submarine. On June 19, the submarine reached Bermuda, completing the only USN capture of a U-boat during the war. *Guadalcanal* is wearing the Ms 32/4A dazzle scheme. The carrier's electronic suite is evident on the mast above the small island and includes an SK air search radar, an SG surface search radar, and a YE homing beacon on top of the mast. The aircraft on the flight deck are part of VC-8, with FM-2 Wildcats and TBM Avengers both visible.

were used as the centerpiece of a task force operating south of Guadalcanal in January 1943. The USN had not figured out how to incorporate escort carriers into fleet operations, as was shown during the battle of Rennell Island on January 29–30, when Japanese torpedo bombers sank a heavy cruiser in spite of the presence of the escort carriers, which failed to provide effective combat air patrol (CAP) over the force.

Five of the Bogue-class ships were dispatched to the Pacific – *Copahee*, *Barnes*, *Altamaha*, *Breton*, and *Nassau*. Only *Nassau* was briefly active in combat operations participating in May 1943 in the invasion of Attu in the Aleutians. The remainder spent the war on ferrying operations, performing as training carriers or as aircraft replenishment carriers. These non-combat duties were actually the primary tasks of most escort carriers. All the Casablanca-class ships were also used in this capacity at least occasionally. Only the Sangamon-class carriers avoided being used extensively in non-combat roles. On April 15, 1944, Carrier Transport Squadron Pacific was formed to better coordinate the work of the escort carriers on ferry missions. By the end of the war, 25 CVEs were under this command. The scope of this effort is shown by the fact that by August 31, 1945, 31,701 aircraft and 137,188 passengers had been delivered to destinations all over the Pacific. Additionally, replenishment escort carriers delivered another 4,500 aircraft to the Fast Carrier Task Force and returned some 2,000 worn-out or damaged aircraft.

ASW deployments in the Pacific were different than in the Atlantic, where this was the primary mission of the escort carriers. *Altamaha* conducted an ASW deployment in April 1944 which was unsuccessful. In the Pacific, Japanese submarines never posed the same threat as German U-boats. Japanese submarines were not focused on Allied sea lines of communications. For this reason, Admiral Chester Nimitz, commander of the Pacific Fleet, was not in favor of dedicated ASW escort carriers. The failed *Altamaha* deployment made Nimitz look at his initial assessment differently, and ASW hunter-killer groups built around an escort carrier were formed. With the invaluable assistance of information derived from the decryption of Japanese naval communications, ASW groups in the Pacific were successful and became a standard part of major operations.

During the invasion of Saipan in June 1944, the supporting escort carriers came under conventional Japanese air attack. The heaviest attack was on June 17. In this view, a Japanese aircraft crashes just astern of *Corregidor*. (Naval History and Heritage Command)

Escort Carriers on the Offensive

By late 1943, the first of the Casablanca-class ships entered the Pacific War. The first three, *Liscome Bay*, *Coral Sea*, and *Corregidor*, joined with three Sangamon-class ships for the invasion of the Gilbert Islands. The invasion was the first time a large group of escort carriers was included in a major amphibious operation. The escort carriers were tasked to provide CAP and ASW protection, as well as providing air support for the troops fighting ashore. Their introduction into these roles was rocky. Avengers from *Suwannee* assisted in the destruction of Japanese submarine *I-35*, but on November 24, 1943 events took a dramatic turn. *Liscome Bay* was steaming off Makin Island in the Gilbert Islands, on which ground combat continued to rage. Japanese submarine *I-175* lined up a shot

Seen from *Kitkun Bay,* a Japanese twin-engine bomber is shot down during an unsuccessful torpedo attack on the escort carriers supporting the invasion of Saipan on June 18, 1944. (Naval History and Heritage Command)

on the unsuspecting carrier. One torpedo hit aft in the area of the magazine and the ship blew apart and sank 23 minutes later. Fifty-one officers and 591 men went down with the ship.

The escort carriers provided most of the close air support for the Marines and soldiers ashore. It was generally not timely or effective since training for this mission was deficient. *Nassau* and *Barnes* arrived after the islands were secured with a load of Hellcat fighters to operate ashore. *White Plains* and *Kalinin Bay* were also used to ferry aircraft to the Gilberts. For the invasion of the Marshall Islands, the three Sangamons were joined by *Manila Bay*, *Coral Sea*, and *Corregidor*.

The next big operation was Operation *Forager* – the invasion of the Marianas. A total of 11 CVEs were involved in combat roles – *Fanshaw Bay*, *Midway* (later renamed as *St Lo*), *White Plains*, *Kalinin Bay* in one division and *Kitkun Bay*, *Gambier Bay*, *Coral Sea*, and *Corregidor* in another. Five of these were making their first combat appearance. *Sangamon*, *Suwannee*, and *Chenango* were initially assigned to forces allocated for the invasion of Guam, but were quickly moved north to support operations off Saipan. *Natoma Bay* and *Manila Bay* were active in a non-combat role ferrying 73 P-47 land-based fighters to Saipan. In July, *Hoggatt Bay* sank two Japanese subs (*RO-48* and *I-55*) off the Marianas during an ASW deployment.

The landing on Saipan took place on June 15. Two days later, a large group of 50 Japanese aircraft from Yap Island attacked the landing force off Saipan but diverted to attack the escort carriers operating nearby. *Gambier Bay*, *Coral Sea*, and *Corregidor* were attacked but not damaged. *White Plains* also fought off several attackers, but *Fanshaw Bay* was not as lucky. She was struck by a bomb which penetrated to the hangar deck. The damage required a trip to the Marshalls for repair and the ship did not return to combat until late July. Overall, it was not a successful action

for the escort carriers, which lost several intercepting Wildcats and proved unable to handle a large air attack. This weakness was due to several factors. The facilities on the escort carriers, primarily the early Combat Information Centers, were limited, and the Fighter Direction Officers were inexperienced. The number of fighter aircraft was also inadequate, and the performance of the FM-2 Wildcat was limited. The deficiencies of the escort carriers in the fleet air defense role would persist throughout the war. Other operational problems with the escort carriers included their low speed, which meant marginal flight operations in no-wind conditions. The single catapult on the carriers meant that if it was not functioning, only the Wildcats could take off. The small aircraft complements meant they had to operate together in groups to be effective, and their air groups were still not trained for night operations. On the positive side, air support to ground troops was much more effective, but the time between the request for and the execution of a mission was still excessive.

Return to the Philippines

In the run-up to the first landings in the Philippines, escort carriers continued to maintain an active pace. Eight CVEs supported the Aitape landings on New Guinea in April 1944, and the Morotai landing in September was supported by six CVEs. The landings in the Palau Islands in September included the biggest CVE force yet – ten carriers in direct support and *Hoggatt Bay* as an ASW carrier.

For the landings on Leyte in the Philippines, 18 escort carriers were organized into three task groups, making it the largest escort carrier operation of the war thus far. The task groups were organized as follows:

Taffy 1: *Sangamon*, *Suwannee*, *Chenango*, *Santee*, *Saginaw Bay*, *Petrof Bay* (embarking a total of 177 aircraft)

Taffy 2: *Natoma Bay*, *Manila Bay*, *Marcus Island*, *Kadashan Bay*, *Savo Island*, *Ommaney Bay* (embarking a total of 147 aircraft)

Taffy 3: *Fanshaw Bay*, *St Lo*, *White Plains*, *Kalinin Bay*, *Kitkun Bay*, *Gambier Bay* (embarking a total of 167 aircraft)

In addition, 11 escort carriers were assigned as replenishment carriers for the operation.

The landing on Leyte in October 1944 prompted an all-out response from the Imperial Japanese Navy (IJN) and the escort carriers were right in the thick of the action. A series of actions was fought on October 25 which involved the CVEs. In the morning, two strikes were launched from Taffy 1 against an IJN surface force defeated hours earlier in a surface engagement in the Surigao Strait. The escort carrier aircraft claimed hits on heavy cruiser *Mogami*.

Later that morning, Taffy 3 faced the most severe test ever thrown at the escort carriers. The main IJN force of four battleships, six heavy cruisers, two light cruisers, and 11 destroyers transited south along the coast of Samar headed toward Leyte Gulf when it encountered the escort carriers. Taffy 3 was the nearest escort carrier force to the Japanese and it came under immediate attack just before 0700 hours. The vastly out-gunned Taffy 3 was in a battle for survival since it was too slow to escape and was only escorted by three destroyers and four destroyer escorts. As Taffy 3 began its ordeal, nearby Taffy 2 was flying sorties over Leyte but soon came to the aid of Taffy 3; Taffy 2 contributed the majority of aircraft sorties against the Japanese fleet during the battle. Taffy 1 was conducting attacks against the aforementioned Japanese force fleeing south from Surigao Strait

and played little part in the battle, which has become known as the Battle off Samar.

As Taffy 3 tried to escape at its top speed of 18kts, it was hidden periodically by rain squalls and by smokescreens laid by the carriers and their escorts. *White Plains* and *St Lo* came under shell fire initially, and later *Kalinin Bay* and *Gambier Bay* came under concentrated fire when their protective smoke screens blew away. *Kalinin Bay* was hit 14 times, mostly by 8in shells. *Kitkun Bay* and *St Lo* were continuously straddled, but neither took a direct hit. *Fanshaw Bay* was hit by four 8in shells, but the carrier was able to continue flight operations. The armor-piercing Japanese shells passed through the unprotected escort carriers, doing little damage.

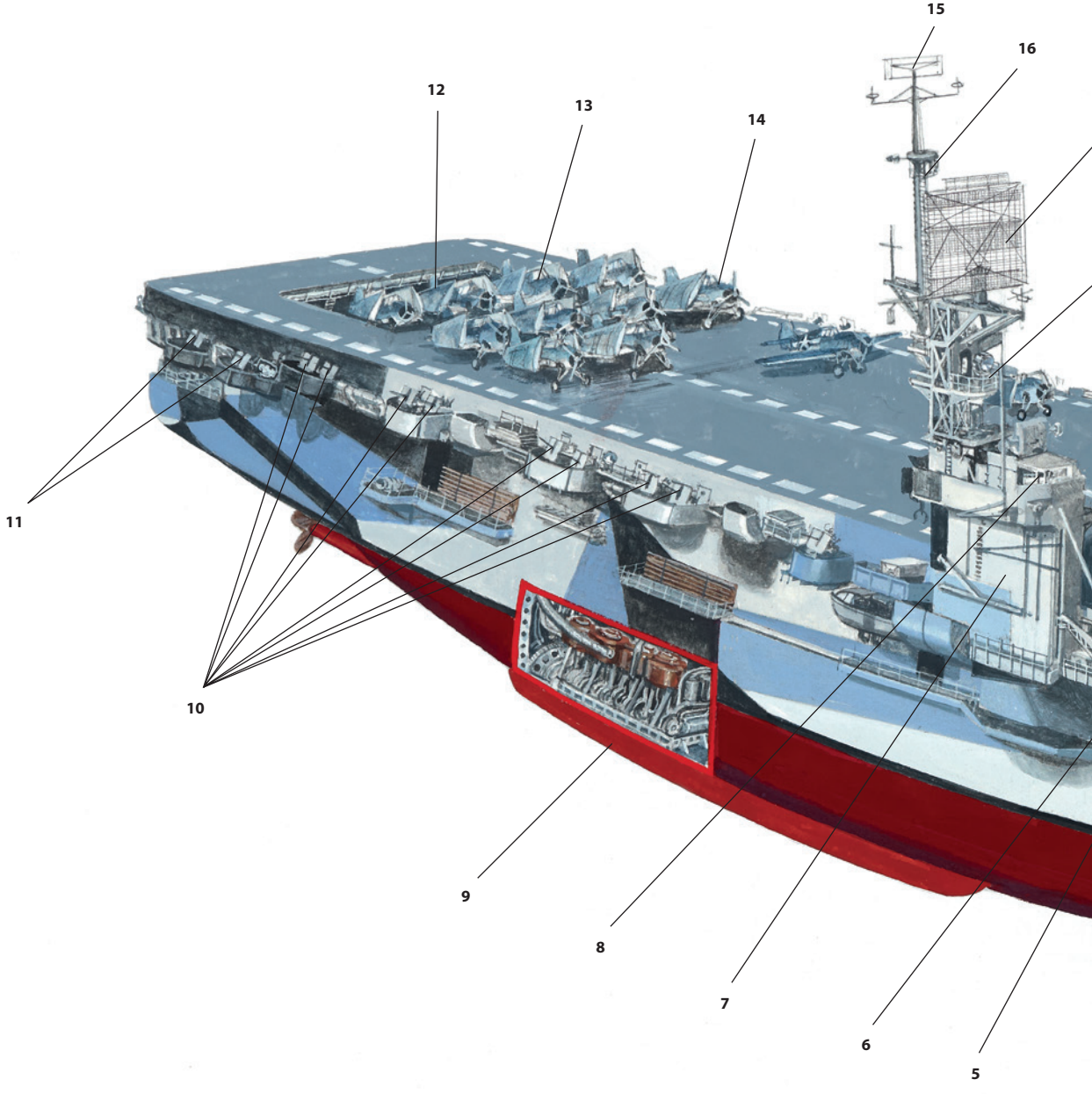
During the Battle off Samar on October 25, 1944, the six escort carriers of Taffy 3 were caught by a Japanese task force with four battleships, six heavy cruisers, and smaller escorts. Japanese confusion and poor gunnery, combined with aggressive American actions by escort carriers' aircraft and their accompanying destroyers and destroyer escorts, resulted in the destruction of only one of the slow and unprotected escort carriers. In this view, *Kitkun Bay* prepares to launch Wildcat fighters, while in the distance Japanese shells are splashing near *White Plains*. (Naval History and Heritage Command)

Since she was at the rear of the formation, *Gambier Bay* took the brunt of Japanese attention. The first hit came at 0810 hours, and at 0820 hours a probable 14in shell burst close aboard and caused severe flooding, reducing her speed to 11kts. Further hits brought her to a stop. Abandon ship was ordered and the ship sank at 0911 hours, after taking as many as 26 hits. *Gambier Bay* was the only escort carrier sunk by gunfire during the battle, but several escorts were also sunk.

Common knowledge would have it that Taffy 3 stood no chance against the Japanese and should have been annihilated in short order. Upon deeper examination, this is a myth. The three Taffy task groups embarked almost 500 aircraft, which was a considerable concentration of naval airpower. It is true these aircraft were not well trained in attacking surface ships and that Taffy 1 hardly contributed to the battle, but the weight of air attacks mounted against the confused Japanese, who thought they had encountered fleet carriers, saw few parallels during the war. Total escort carrier sorties during the day against the Japanese force were 441: 209 by fighters and 232 by Avengers (68 with torpedoes). This was a number greater than the attacks the day before mounted by the Fast Carrier Task Force against the same Japanese force which sank super battleship *Musashi*. The defense mounted by the Taffy task groups featured one of the most concerted USN air attacks on Japanese surface ships during the entire war.

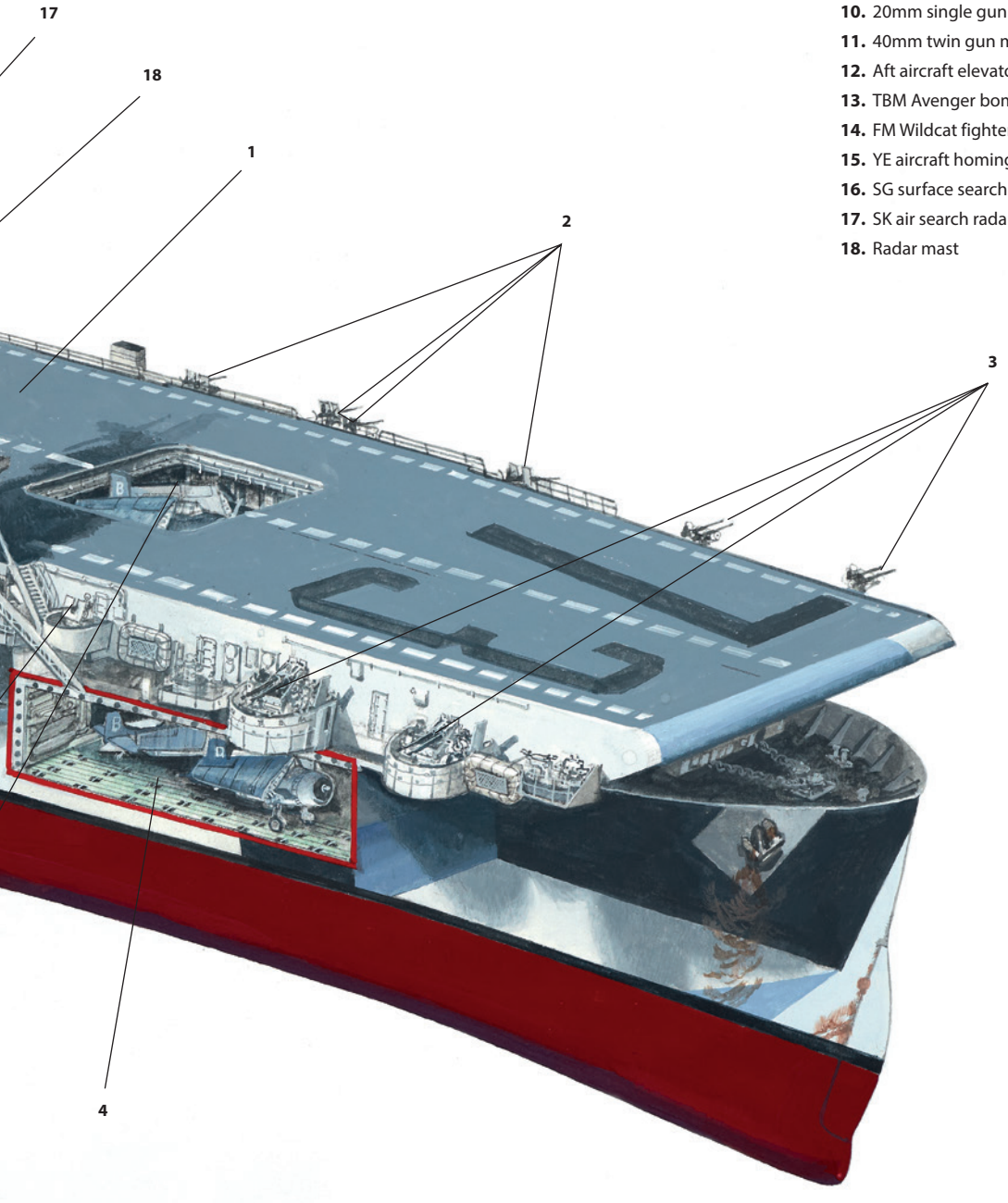
These attacks were not well coordinated and often failed to carry weapons suited for attacking ships, but from soon after the start of the action until the Japanese broke off the action around 0930 hours, the IJN was subjected to relentless air assault. By 0730 hours, Taffy 3 had launched 95 aircraft (51 Wildcats and 44 Avengers with an assortment of weapons but only one with a torpedo). The attacks were made piecemeal, and as some aircraft ran out of weapons they made dummy runs to keep the pressure on the Japanese who were impressed with the intensity of the American air activity. The last Taffy 3 strike was launched at 1015 hours with eight Avengers and two Wildcats. Taffy 2 launched a total of six attacks during the day. The first comprised 15 Avengers with torpedoes and 20 fighters; the second included 16 Avengers with torpedoes and eight fighters launched at 0833 hours;

This is *Gambier Bay* as she appeared in October 1944 when she was sunk at the Battle of Leyte Gulf. The ship was a member of the Casablanca class, which consisted of 50 ships, making it the largest class of escort carriers, or any type of carrier, ever built. *Gambier Bay* is perhaps the best-known USN escort carrier of the war since she was engaged at the Battle off Samar in a heroic action against an overwhelmingly powerful force of Japanese surface ships. The carrier was sunk by Japanese gunfire, making her the only USN carrier to meet this fate. The ship is in MS 32/15A dazzle scheme and shows the standard Casablanca-class armament.



KEY

1. Flight deck
2. 20mm single gun mounts
3. 40mm twin gun mounts
4. Hangar deck
5. Forward aircraft elevator
6. 20mm single gun mounts
7. Island
8. Navigation bridge
9. Engine room with reciprocating engines
10. 20mm single gun mounts
11. 40mm twin gun mounts
12. Aft aircraft elevator
13. TBM Avenger bomber
14. FM Wildcat fighter
15. YE aircraft homing antenna
16. SG surface search radar
17. SK air search radar
18. Radar mast



Seen from *Kalinin Bay*, *Gambier Bay*, another escort carrier, and two destroyer escorts make smoke during the Battle off Samar. Of the six escort carriers present, only *Gambier Bay* was sunk when shell damage forced her to fall behind Taffy 3's formation, leading to her destruction by Japanese gunfire. (Naval History and Heritage Command)

the third comprised 12 Avengers (five with torpedoes) and eight fighters; the fourth strike launched at 1115 hours was the biggest with 19 fighters and 37 Avengers; the fifth launched at 1331 hours with 11 Avengers (with the last three available torpedoes) and eight fighters; the last attack launched just after 1500 hours included 26 Avengers and 24 Wildcats. During the day, Taffy 2 launched 117 Avengers and 87 Wildcats. These aircraft dropped 49 torpedoes, 76 tons of bombs and fired 276 rockets.

Aside from delaying the Japanese rush to get close enough to pummel Taffy 3, the escort carrier aircraft exacted a steep price from the Japanese. *Kalinin Bay* Avengers put 500lb bombs into heavy cruiser *Chokai*. She came to a halt, and a destroyer rescued her crew and scuttled her with a torpedo. Heavy cruiser *Chikuma* came under attack from Taffy 2 and *Kitkun Bay* Avengers, was brought to a stop by torpedo damage, and was also scuttled by a destroyer. *Suzuya*, another heavy cruiser, was damaged by an American destroyer-launched torpedo, and later finished off by bombs from Avengers, which created a devastating explosion from the cruiser's onboard torpedoes leading to her destruction. In addition to the three heavy cruisers sunk by air attack, several other IJN ships were damaged. The cost for this epic victory was high. In the course of this surface battle and from the kamikaze attacks described below, 1,118 men from the ship's company and aviators of Taffy 1 and 3 were lost.

On October 26, the escort carriers got another crack at an IJN surface force. A Japanese task group carrying reinforcements for Leyte was caught in Ormoc Bay and attacked by 23 Avengers and 29 Wildcats from Taffy 2 and 13 Avengers and 15–20 fighters from Taffy 1. The light cruiser *Kinu* and a destroyer were sunk.

Escort Carriers vs Kamikazes

Taffy 1 became the first victim of the latest Japanese weapon – the kamikaze. Six suicide aircraft conducted the first attack. One aircraft hit *Santee* and its bomb penetrated to the hangar deck. Fortunately, no fire was started so damage was moderate. A second hit *Suwannee* but the flight deck was quickly repaired and flight operations soon resumed. The other aircraft were shot down but, for the loss of six aircraft, the Japanese had put one escort carrier out of the war for three months and slightly damaged another. Immediately after escaping the IJN's surface attack, Taffy 3 was subjected to a kamikaze attack. Two aircraft crashed onto *Kalinin Bay*, but damage was light. One scored a glancing blow on the flight deck and a second hit aft but caused little damage. *Kitkun Bay* was hit by a suicide attacker on the portside catwalk, but again damage was light. Two more suicide aircraft approached *White Plains*. One turned away under antiaircraft fire, but the other continued toward the ship and hit the water, which caused shock damage when the aircraft's bomb exploded. The final kamikaze to attack Taffy 3 conducted a skillful dive on *St Lo*. The kamikaze approached from astern, dropping its bomb, which landed on the flight deck aft. The kamikaze then hit the flight

deck amidships at a shallow angle, but skidded off the bow. While the fire on the flight deck was quickly extinguished, the bomb penetrated to the hangar deck and started a fire among the aircraft there being armed and fueled. The resulting fires forced the ship to be abandoned, and destroyed the ship when the fires reached the magazines.

The following day, the remaining pilots of the initial group of kamikazes found Taffy 1 again. Three suicide aircraft penetrated the CAP; one attacked *Santee* and hit the ship on the flight deck, which caused a fire fed by the ten aircraft parked on the flight deck. The fire spread to the hangar, engulfing another ten aircraft. The ship survived, but 85 crewmen were killed, 58 missing, and 102 wounded.

The first kamikaze attacks on USN escort carriers were a significant success. A handful of kamikazes had sunk one carrier and damaged five more, some of which were forced to leave the operational area for repairs. These first attacks set a pattern which held true for the remainder of the war. The radar aboard the CVEs was not entirely reliable, and suffered further confusion when the ships operated near land. Escort carrier antiaircraft armament was insufficient to break up kamikazes when in a dive headed toward the carriers. CAP provided by escort carriers was not dense enough to deter all kamikaze attacks and the fighter direction from these ships was often suspect. When hit, the escort carriers often lived up to their nickname of "combustible, vulnerable, and expendable."

Following the capture of Leyte, the next invasion was planned for Mindoro. During this operation, meant to clear the way to the main Philippines island of Luzon, the six escort carriers involved performed excellently, with their 144 embarked fighters providing air defense against sporadic suicide attacks. For the first time, the CVEs operated as a single task force with old battleships.

For the invasion of Luzon, 18 escort carriers were assigned to provide CAP. It was not enough – the invasion force was subjected to ten consecutive days of kamikaze attacks and suffered heavy damage. On January 4, 1945, while in the Sulu Sea headed toward Luzon, the attacks began. A twin-engined Japanese "Frances" bomber evaded radar detection and dove on *Ommaney Bay*. The aircraft hit the ship with a glancing blow, causing little damage, but it dropped two bombs which penetrated to the hangar deck and the engine room. With power lost, the fires could not be fought. They engulfed the ship, which was abandoned an hour after the attack; the ship was later scuttled.

Heavier attacks were mounted on January 5. One kamikaze hit *Manila Bay* and penetrated to the hangar deck, but the fires were put out. *Savo Island* suffered a near miss, and *Tulagi* escaped undamaged from an attack by four kamikazes. On January 8, escort carriers again came under attack. *Kadashan Bay* was hit on the waterline, but fortunately, the kamikaze's bombs did not explode. *Kitkun Bay* was also hit on the waterline, but again the

St Lo burning and abandoned off Samar after a kamikaze hit on October 25, 1944. This was the first of three Casablanca-class escort carriers sunk by kamikaze attack. Among the design deficiencies of this class that contributed to its ships' inability to fight major fires was a fire main system made of cast iron which was susceptible to shock damage and subsequent loss of water pressure. (Naval History and Heritage Command)

Ommaney Bay burning in the Sulu Sea on January 4, 1945 during the invasion of Luzon. The ship was hit by a single "Frances" twin-engined bomber which attacked with almost no warning. The impact of the aircraft and the explosions of its two bombs created a massive conflagration which quickly raged out of control. The ship was abandoned and later scuttled; 95 crewmen were dead or missing and 65 wounded. (Naval History and Heritage Command)

aircraft's bombs did not explode. The hit caused flooding, loss of power, and severe personnel casualties, but the carrier was saved. Both carriers struck that day were out of action for months.

The final blow directed at the escort carriers supporting the Luzon invasion occurred on January 13, when a Japanese Army fighter crashed into *Salamaua*. Both of its bombs hit the ship, one exploding in the hangar bay and the other passing through the ship leaving a hole near the waterline. The crew fought the fires successfully, but the ship was out of the fight until April.

Okinawa

The last escort carrier lost to kamikaze attack was suffered during the interlude before the invasion of Okinawa. On February 19, 1945, the Americans invaded Iwo Jima. Ten escort carriers were assigned for air defense and close support and two more for ASW. Two days later, a group of 20 kamikazes attacked the carrier force. Several selected *Bismarck Sea* for attention. A twin-engined Japanese "Betty" bomber came in low, survived antiaircraft fire, and crashed aft. A second kamikaze may have also struck the ship later. A severe fire broke out on the hangar deck which could not be contained. The ship sank with the loss of 119 crewmembers. She was the last of the five escort carriers lost in the Pacific War. The same attack also damaged *Lunga Point*.

The final escort carrier lost during the war was *Bismarck Sea*, which was hit by two kamikazes during the night of February 21–22, 1945, while she was taking part in the invasion of Iwo Jima. This view, taken from *Saginaw Bay*, shows one of the explosions which racked the carrier as the crew was abandoning ship. (Naval History and Heritage Command)

The most sustained kamikaze ordeal which the USN was exposed to came during the Okinawa campaign from April to June 1945. Twenty-six escort carriers were active at various times in the campaign, supported by another four bringing replacement aircraft and crews. Because the Japanese focused on picket destroyers, and to a lesser extent on the Fast Carrier Task Force, escort carriers were

not heavily struck. The fifth kamikaze attack wave on May 4 included an attack by a single fighter which hit *Sangamon*. The ship received severe damage and was not repaired before the end of the war.

The final toll for the escort carriers during the war was grisly. The entire nature of the threat against the escort carriers changed with the introduction of the kamikaze. The kamikaze lacked the means to deal mortal blows to large ships. The exception to this rule was aircraft carriers since they possessed the sources to start and sustain a conflagration. This danger was heightened on escort carriers, which lacked the protection, fire-fighting capabilities, and large damage control crews found on fleet carriers. For these reasons, and because escort carrier air defense capabilities were inadequate to start with, the largest ships sunk by kamikazes were escort carriers. In 1944, seven were struck and damaged, and one, *St Lo*, was sunk by kamikazes. In 1945, the toll grew, with nine escort carriers damaged and two, *Ommaney Bay* and *Bismarck Sea*, sunk.

Just after 1900 hours on May 4, 1945, *Sangamon* was attacked by a single kamikaze in Kerama Retto off Okinawa. The single attacker, identified as a Ki-61 "Tony," approached from astern, was hit by antiaircraft fire, and missed the ship by less than 25ft on the starboard quarter. About 30 minutes later, *Sangamon* was not so lucky. After dark, a Ki-45 "Nick" twin-engined fighter attacked, dropping its bomb first, and then struck the ship. Both the bomb and the Nick penetrated to the hangar deck, where a major fire took hold. The fire was brought under control; no other escort carrier faced such a large hangar deck fire and survived. However, the damage was so extensive that the ship was not repaired before the end of the war. (Naval History and Heritage Command)

Despite the specter of the kamikaze, escort carriers provided invaluable service during the American drive across the Pacific. On top of the almost totally forgotten but essential logistical efforts undertaken by the escort carriers, their contributions during the relentless pace of amphibious operations was invaluable.

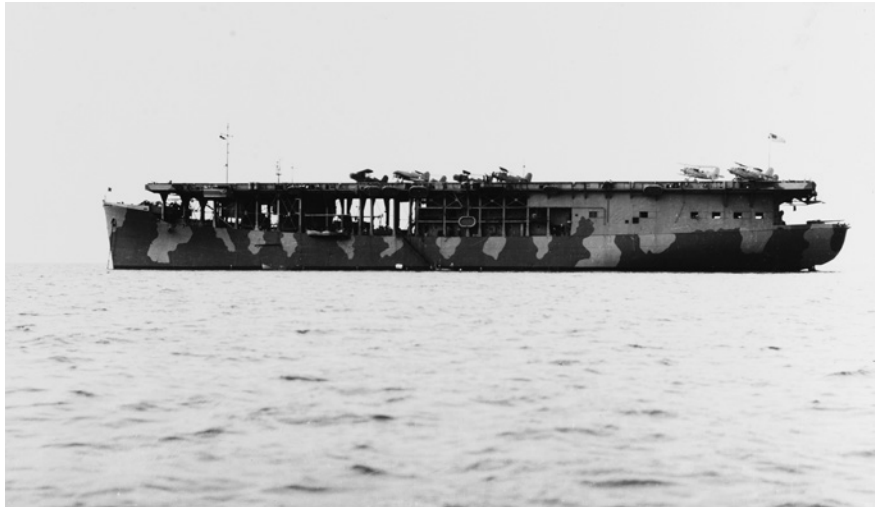
Postwar, the escort carriers participated in Operation *Magic Carpet* to get American servicemen home until it concluded in September 1946. Most surviving escort carriers were briefly placed in reserve and then scrapped or returned to merchant service. The first escort carrier, *Long Island*, had a new life as a merchant ship and then as a floating university. The Bogue-class units were retained in reserve, and three – *Card*, *Core*, and *Breton* – served as aircraft transports into the 1970s. In 1964, *Card* was mined and sunk by Viet Cong sappers in Saigon, but was raised and returned to service. Few Kaiser-built ships saw further service since they were never seen as anything more than expedient carriers. The Commencement Bay-class ships were the ultimate escort carriers and went on to have significant postwar careers.

THE CLASSES

The *Long Island* and *Charger*

Design and Construction

The ship selected for the first conversion into an escort carrier was MS *Mormacmail*. The USN acquired her in March 1941, and, as per Roosevelt's directive, sent the ship to Newport News Shipbuilding and Dry Dock for a quick three-month conversion. In order to meet this timeline, the conversion was basic – a 362ft flight deck was added over the hull which did not extend to the ship's bow. A single elevator was fitted and one catapult was provided. No island was added, making her the only USN aircraft carrier completed without one. In September 1941, the ship returned to the yard for

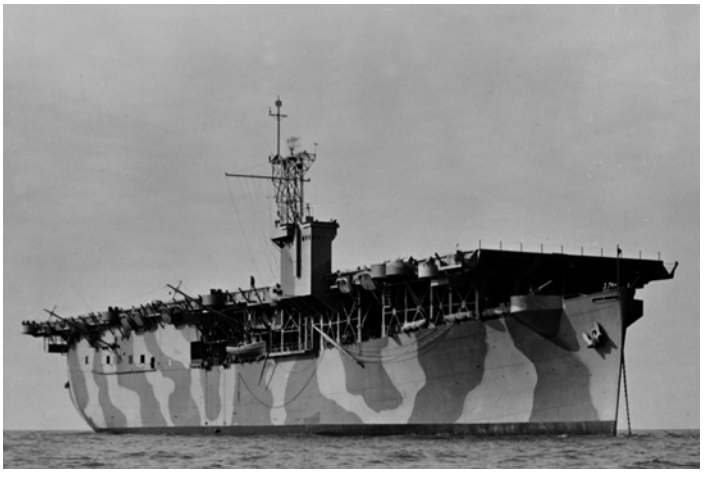


Long Island shown in November 1941 following the extension of her flight deck. The open forward section of her hangar deck is evident. The ship is wearing the Measure 12 (Modified) camouflage scheme. Aircraft on her flight deck include seven Curtiss SOC-3A scout-observation types and one Brewster F2A fighter. (Naval History and Heritage Command)

modification. The flight deck was extended by 77ft and the ship was given further subdivision for increased damage resistance.

***Long Island* and *Charger* Construction**					
Ship	**Built at**	**Laid down**	**Launched**	**Commissioned**	**Fate**
Long Island (CVE 1)	Federal (Kearney)	March 13, 1939	November 4, 1939	August 25, 1942	Stricken April 1946; converted to merchant use and scrapped 1977
Charger (CVE 30)	Federal (Kearney)	June 3, 1938	March 4, 1939	September 24, 1942	Stricken March 1946; scrapped 1962

Charger was a sister ship of *Long Island* converted from a C-3 type cargo ship with diesel propulsion. She was part of a class of four ships built for the RN. In 1941, the ship was commissioned into the RN as HMS *Charger*. On October 4, 1941, she was returned to USN service and recommissioned in March 1942, keeping her British name. The carrier spent her career on the East Coast as a training ship for British aviators. She was stricken in March 1946 and converted back into a merchant ship. In almost every respect, *Charger* was identical to *Long Island*, the major difference being that, as with all RN escort carriers, she was fitted with a small island.



Charger was the intermediate step between the Long Island and Bogue classes. The ship was nearly identical to *Long Island* except for the addition of a small island. The carrier is seen at anchor on May 12, 1942 in RN service. Note the SC radar on the mast. In October, she was returned to the USN and spent almost the entire war in the Chesapeake Bay, training carrier crews and pilots. She is painted in Camouflage Measure 12 (Modified). (Naval History and Heritage Command)

Armament

Long Island was fitted with a 5in/51 single mount on the stern for defense against surface attacks. Antiaircraft protection was provided by two 3in/50 single mounts on the bow and four .50-caliber machine guns fitted along both sides of the flight deck. During her first modification, the machine guns were replaced with single 20mm guns, and in 1942, before going to the South Pacific, a total of 20 20mm guns were fitted. *Charger* had an identical armament.

Wartime Service and Fate

As the first escort carrier, *Long Island* was initially employed in a number of trials to test the suitability of operating aircraft off the short decks of converted freighters. In mid-1942, the USN transferred its only escort carrier to the Pacific. She came in useful in the South Pacific, ferrying the first US Marine aircraft (19 Wildcats and 12 Dauntlesses) to Guadalcanal on August 20. Following pilot training duties off the West Coast, in February 1944 *Long Island* was assigned aircraft ferry duties for the remainder of the war and had her arresting gear and barriers removed. She was stricken from the registry of USN ships in 1946 and converted in 1949 to a merchant ship and given to commercial owners.

***Long Island* Specifications (*Charger* similar)**	
Displacement	Standard 8,390 tons; Full 13,890 tons
Dimensions	Length 492ft; beam 69ft 6in; draft 25ft 9in
Propulsion	2 boilers and geared turbines generating 7,965shp on 1 shaft; maximum speed 16.5kts
Range	Not available
Crew	970

The Bogue Class

Design and Construction

There were 45 ships of this class built, and of these 34 served in the Royal Navy. Of the first 21 built in 1942, the USN received ten and the RN 11. The 1943 build program totaled 24 ships, and all but one went to the British. The USN retained only *Prince William*, which spent the war as a training carrier. The only difference between *Prince William* and the British ships was the arrangement of the 40mm gun battery. All of the USN ships were built in Tacoma, Washington.

Bogue underway in Puget Sound, Washington, on November 3, 1942 shortly after her commissioning in September. The carrier was completed with an SC radar and a light antiaircraft suite, both of which are evident in this view. The obvious difference between the Bogue class and *Charger* was the fully enclosed hangar deck. (Naval History and Heritage Command)

Bogue-Class Construction (USN ships only)					
Ship	**Built at**	**Date Purchased by USN**	**Launched**	**Commissioned**	**Fate**
Bogue (CVE 9)	Todd, Tacoma	May 1, 1942	January 15, 1942	June 26, 1942	Stricken March 1959; scrapped 1960
Card (CVE 11)	Todd, Tacoma	May 1, 1942	April 21, 1942	November 8, 1942	Stricken September 1970; scrapped 1971
Copahee (CVE 12)	Todd, Tacoma	February 8, 1942	October 21, 1941	June 15, 1942	Stricken January 1959; scrapped 1961
Core (CVE 13)	Todd, Tacoma	May 1, 1942	May 15, 1942	December 10, 1942	Stricken September 1970; scrapped 1971
Nassau (CVE 16)	Todd, Tacoma	May 1, 1942	April 4, 1942	August 20, 1942	Stricken March 1959; scrapped 1961
Altamaha (CVE 18)	Todd, Tacoma	May 1, 1942	May 25, 1942	September 15, 1942	Stricken March 1959; scrapped 1961
Barnes (CVE 20)	Todd, Tacoma	May 1, 1942	May 22, 1942	February 20 1943	Stricken March 1959; scrapped 1959
Block Island (CVE 21)	Todd, Tacoma	May 1, 1942	June 6, 1942	March 8, 1943	Sunk May 29, 1944
Breton (CVE 23)	Todd, Tacoma	May 1, 1942	June 27, 1942	April 12, 1943	Stricken August 1971; scrapped 1972
Croatan (CVE 25)	Todd, Tacoma	May 1, 1942	August 3, 1942	April 28, 1943	Stricken September 1970; scrapped 1971
Prince William (CVE 31)	Todd, Tacoma	May 18, 1942	August 23, 1942	April 9, 1943	Stricken March 1959; scrapped 1961

The Bogue class was a direct attempt to address the design problems identified with the Long Island class. The C3-S-A1 merchant hull was the basis for the design, and the overall result was a much-improved carrier. The diesel engines on *Long Island* proved troublesome, so to address this and increase speed, the Bogue class shifted to steam turbines. The new top speed was 18kts, which represented a marginal increase.

The size of the flight deck was expanded to 442ft 3in in length and 111ft 6in wide. The single port-side catapult forward was retained. To increase the speed and safety of handling aircraft on such a small deck, two elevators, nine arresting wires, and three crash barriers were provided. Stability was improved by the lowering of the flight deck by 4ft. The size of the hangar deck was also expanded to about 240ft in length between the elevators. Aircraft handling on the hangar deck was a real challenge since the original sheer and camber of the merchant hull was retained. This meant that aircraft handling required a number of pulleys, which made moving aircraft difficult at best and often impossible in rough seas.

The primary visual difference on the new class was the addition of a small island on the starboard side. The island was a mere 6ft across but included a pilot house, a chart room, and cabins for the captain and navigator. Atop the island was the mast for radar and other equipment.

A major deficiency of all escort carriers was that they were essentially unprotected. The only exception was some splinter protection around the island, some gun positions, and other key areas including the torpedo stowage area in the hangar. There was no underwater protection, which obviously made them very vulnerable to torpedoes. From 1943, escort carriers were provided with some additional magazine protection by adding a 1in thick longitudinal bulkhead outboard of the magazine, with water ballast between the bulkhead and the outer hull in an attempt to provide some protection against torpedoes.

Copahee was one of the many escort carriers that spent her entire wartime career employed as a transport. In this view from May 9, 1943, the carrier is shown off the Mare Island Navy Yard with a load of SBD dive-bombers and PV-1 patrol aircraft. This view clearly shows the 5in/38 gun mounted on the stern and the twin 40mm guns on the fantail. (Naval History and Heritage Command)

All factors considered, the Bogue-class conversion was a success. The ship proved able to handle an air component of some 20 aircraft, including the large Avenger torpedo bombers, and these could be launched in fairly rough sea conditions. The ships proved easy to handle and maneuverable, even on their one screw. Living conditions aboard were also judged to be above average.

Armament

The poor defensive armament on *Long Island* was identified as a weakness, so it was increased on the Bogue-class ships. Two 5in/51 guns were originally fitted for protection from surface attack. These were fitted in single mounts on each quarter. After the first few ships in the class, this was changed to the 5in/38 which was capable of engaging surface and air targets. As completed, antiaircraft armament consisted of eight twin 40mm mounts and 20 single 20mm mounts. Some ships received additional 20mm single mounts on the sponsons along the hangar deck.

Wartime Service and Fate

Of the 11 USN ships in this class, five (*Bogue*, *Card*, *Core*, *Block Island*, and *Croatan*) saw combat service in the Atlantic. *Prince William* also served in the Atlantic, but in the capacity as a training ship. The remaining five ships were mainly active in the Pacific, and almost exclusively as aircraft transports. In this capacity they could carry 50 aircraft on the flight deck and 40 on the hangar deck. The only ship lost in the war was *Block Island*, which was sunk by U-boat torpedoes in 1944.

Following the war, all ten surviving ships were placed in reserve. Only *Card*, *Core*, *Breton*, and *Croatan* saw service again as transports. *Card* was sunk in Saigon in 1964 and raised to serve into 1970. *Croatan* had a brief career with the National Aeronautics and Space Administration from 1964 to 1965 as a floating rocket launch pad.

Bogue-Class Specifications	
Displacement	Standard 8,390 tons; Full 13,890 tons
Dimensions	Length 495ft 8in; beam 69ft 6in; draft 23ft 3in
Propulsion	2 boilers and geared turbines generating 8,500shp on 1 shaft; maximum speed 18kts
Range	26,000nm at 15kts
Crew	890

Santee seen here in mid-October 1942 shortly before she participated in the invasion of North Africa. The openings low on her hull betray her origin as an oiler and provide a good recognition feature. Aircraft on her flight deck include (from aft): Dauntless dive-bombers, Wildcat fighters, and Avenger torpedo planes. *Santee* is painted in Ms 17. (Naval History and Heritage Command)

The Sangamon Class

Design and Construction

The 1942 escort carrier conversion program was set for 24 ships, but only 20 C3 hulls were available. The difference was made up by four Cimarron-class fleet oilers. These valuable ships were originally built in 1939 as mercantile tankers and taken over by the USN in 1940 for conversion into fleet oilers. In 1942, the four ships were selected for conversion to escort carriers and sent to three different yards. Their size and speed made them the basis for the best early-war escort carrier conversion. The four ships were hurried to completion so they could participate in the planned invasion of French North Africa. Two were commissioned in August and the other two in September 1942.

Sangamon-Class Construction

Ship	Built at	Laid down	Launched	Commissioned	Fate
Sangamon (CVE 26)	Federal (Kearney)	March 13, 1939	November 4, 1939	August 25, 1942	Stricken October 1945; scrapped 1948
Suwannee (CVE 27)	Federal (Kearney)	June 3, 1938	March 4, 1939	September 24, 1942	Stricken March 1959; scrapped 1962
Chenango (CVE 28)	Sun Shipbuilding	July 10, 1938	January 4, 1939	September 19, 1942	Stricken March 1959; scrapped 1962
Santee (CVE 29)	Sun Shipbuilding	May 31, 1938	March 4, 1939	August 24, 1942	Stricken March 1959; scrapped 1960

These were large ships, with a full load displacement of 23,875 tons and an overall length of 553ft. The flight deck measured 503ft by 105ft and the 220ft-long hangar deck had no sheer, which made aircraft handling much easier. One catapult was originally fitted, with a second one added in 1944. The flight deck was much lower to the water (42ft versus 54ft on the

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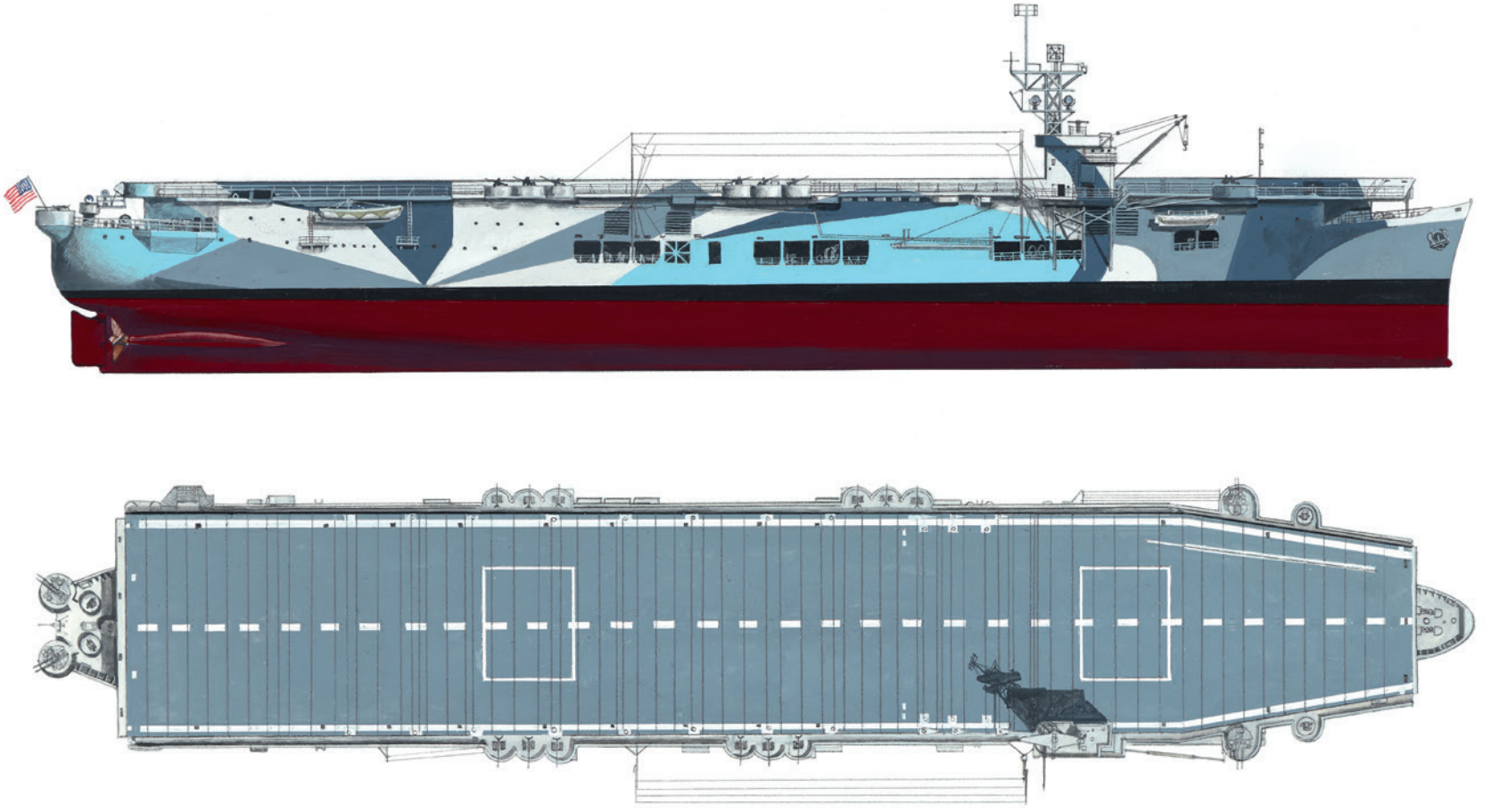
THE SANGAMON CLASS

This is *Santee* in November 1942 when she participated in the invasion of French North Africa. This class of four ships was the most capable early-war USN escort carrier. This capability stemmed from a larger tanker hull; note the openings low on the hull which reveal her tanker origin. *Santee* is carrying SC and SG radars and a YE homing beacon on top of the mast. The ship went to war with an inadequate antiaircraft fit (evident in the overhead view), which initially consisted of four twin 40mm mounts (two on the stern, two forward of the island), and 12 single 20mm guns. Two 5in/38 guns were placed on the stern. Later in the war, the ships of this class had their SC radars replaced with the larger SK set and their armament was upgraded. Two quad 40mm mounts were placed on the fantail, and a total of ten twin 40mm guns were placed around the flight deck augmented by 19 20mm guns, including three in the bow. In these profiles, *Santee* is wearing the Ms 17 scheme, which was one of the USN's earliest dazzle schemes.



Suwannee at anchor in Kwajalein Harbor, Marshall Islands, on February 7, 1944. Note the aircraft of CVEG-60, including SBD dive-bombers, F6F fighters, and TBF torpedo planes. The ship is carrying both SG and SC radars. The antiaircraft fit has been greatly augmented as is evident from the 20mm guns fitted on the bow and the two twin 40mm mounts on the port bow. (Naval History and Heritage Command)

Bogue class), so the ship was more stable and able to operate aircraft in more challenging sea conditions.

Speed was increased by the use of two turbines driving twin screws. However, both turbines were located in a single engine room, which made the propulsive power vulnerable to a single torpedo hit. Endurance was also increased. In addition to the fuel carried in the bunkers, these ships retained extra fuel capacity and the equipment to service other ships.

Armament

Two single 5in/38 guns were fitted aft. The original 40mm fit was four twin mounts, but from 1943 this was modified to two quad and ten twin mounts. Each ship also carried 12 single 20mm mounts when commissioned, which was later increased to 19.

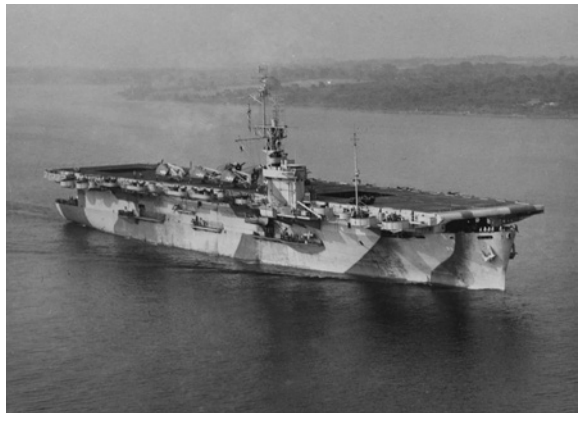
Wartime Service and Fate

The combination of a larger aircraft capacity, greater endurance, and superior seaworthiness made the Sangamons the best escort carrier class of the war. In their first operation off North Africa, they were used as substitute fleet carriers. *Santee* stayed in the Atlantic to hunt U-boats, but the other three arrived in the Pacific in early 1943 and operated together as a division and were used as substitute fleet carriers in the South Pacific. Because of their capabilities, they were not used regularly as transports and were involved in most major amphibious operations through to the end of the war. *Santee* joined the rest of the class in the Pacific in early 1944.

Sangamon was taken out of service immediately after the war and scrapped. The other three ships remained in reserve, but never returned to service before being stricken in 1959 and subsequently scrapped.

Sangamon pictured in 1943, probably in New Caledonia in the South Pacific, where she operated out of for seven months of the year. (Naval History and Heritage Command)

Sangamon-Class Specifications	
Displacement	Standard 10,500 tons; Full 23,875 tons
Dimensions	Length 553ft 6in; beam 75ft; draft 30ft 7in
Propulsion	4 boilers and geared turbines generating 13,500shp on 2 shafts; maximum speed 18kts
Range	23,900nm at 15kts
Crew	1,080



The Casablanca Class

Design and Construction

These ships were also known as the Kaiser class and were the first escort carriers built as such from the keel up. The design of the ship was not actually the work of Kaiser, but of the naval architect firm of Gibbs and Cox. Kaiser proposed a seemingly more capable escort carrier which could be built quickly using his proven methods of mass production. Roosevelt was quick to accept this, and instructed a group of officers from the Navy's Bureau of Ships and officials from the Maritime Commission to figure out the details.

The design was not as capable as the Navy would have preferred, but since Roosevelt's desires were clear, planning continued. An S4-S2-BB3 merchant hull was selected as the basis for the new design. The hulls were built to merchant specifications and modified as necessary to naval standards. The plan was to build all 50 ships at Kaiser's Vancouver, Washington yard using all-welded and extensive modular construction. Fitting out took place at the naval base in Astoria, Oregon. The lead ship of the class, *Casablanca*, was scheduled for delivery in February 1943 but various problems delayed her commissioning until July 8. Once Kaiser's yard hit its stride, it completed the entire program by July 8, 1944, an awesome achievement by any measure. Some of the later ships were completed and commissioned in under four months.

Casablanca-Class Construction

Ship	Built at	Laid down	Launched	Commissioned	Fate
Casablanca (CVE 55)	Kaiser, Vancouver	November 3, 1942	April 5, 1943	July 8, 1943	Stricken July 1946; scrapped 1947
Liscome Bay (CVE 56)	Kaiser, Vancouver	December 9, 1942	April 19, 1943	August 7, 1943	Sunk November 1943
Anzio (CVE 57)	Kaiser, Vancouver	December 12, 1942	May 1, 1943	August 27, 1943	Stricken March 1959; scrapped 1960
Corregidor (CVE 58)	Kaiser, Vancouver	December 17, 1942	May 12, 1943	August 8, 1943	Stricken October 1958; scrapped 1960
Mission Bay (CVE 59)	Kaiser, Vancouver	December 28, 1942	May 26, 1943	September 13, 1943	Stricken September 1958; scrapped 1960
Guadalcanal (CVE 60)	Kaiser, Vancouver	January 5, 1943	June 5, 1943	September 25, 1943	Stricken May 1958; scrapped 1960
Manila Bay (CVE 61)	Kaiser, Vancouver	January 15, 1943	July 10, 1943	October 5, 1943	Stricken May 1958; scrapped 1960
Natoma Bay (CVE 62)	Kaiser, Vancouver	January 17, 1943	July 20, 1943	October 14, 1943	Stricken September 1958; scrapped 1960

ABOVE LEFT
CVE 57 was laid down as *Alikula Bay* and renamed *Coral Sea* on April 3, 1943. After commissioning, she was renamed *Anzio* on September 15, 1944. Many escort carriers went through similar name shuffles, often to free up names for larger carriers under construction. When she entered combat service in the Pacific, *Anzio* was used as an ASW carrier and accounted for four Japanese submarines. This is the carrier underway on May 21, 1945. (Naval History and Heritage Command)

ABOVE RIGHT
This August 10, 1944 photograph of *Mission Bay* provides a good view of a typical Casablanca-class escort carrier. Note the large SK antenna on the mast and the 40mm twin and 20mm single mounts arrayed alongside the flight deck. *Mission Bay* is wearing the Ms 32/4A scheme. (Naval History and Heritage Command)

St Lo (CVE 63)	Kaiser, Vancouver	January 23, 1943	August 17, 1943	October 23, 1943	Sunk October 1944
Tripoli (CVE 64)	Kaiser, Vancouver	February 1, 1943	September 2, 1943	October 31, 1943	Stricken February 1959; scrapped 1960
Wake Island (CVE 65)	Kaiser, Vancouver	February 6, 1943	September 9, 1943	November 7, 1943	Stricken April 1946; scrapped 1947
White Plains (CVE 66)	Kaiser, Vancouver	February 11, 1943	September 27, 1943	November 15, 1943	Stricken June 1958; scrapped 1959
Solomons (CVE 67)	Kaiser, Vancouver	March 19, 1943	October 6, 1943	November 21, 1943	Stricken May 1946; scrapped 1947
Kalinin Bay (CVE 68)	Kaiser, Vancouver	April 26, 1943	October 15, 1943	November 27, 1943	Stricken May 1946; scrapped 1947
Kasaan Bay (CVE 69)	Kaiser, Vancouver	May 11, 1943	October 24, 1943	December 4, 1943	Stricken March 1959; scrapped 1960
Fanshaw Bay (CVE 70)	Kaiser, Vancouver	May 15, 1943	November 1, 1943	December 9, 1943	Stricken March 1959; scrapped 1959
Kitkun Bay (CVE 71)	Kaiser, Vancouver	May 31, 1943	November 8, 1943	December 15, 1943	Stricken May 1946; scrapped 1947
Tulagi (CVE 72)	Kaiser, Vancouver	June 7, 1943	November 15, 1943	December 21, 1943	Stricken May 1946; scrapped 1947
Gambier Bay (CVE 73)	Kaiser, Vancouver	July 10, 1943	November 22, 1943	December 28, 1943	Sunk October 1944
Nehenta Bay (CVE 74)	Kaiser, Vancouver	July 20, 1943	November 28, 1943	January 3, 1944	Stricken August 1959; scrapped 1960
Hoggatt Bay (CVE 75)	Kaiser, Vancouver	August 17, 1943	December 4, 1943	January 11, 1944	Stricken September 1959; scrapped 1960
Kadashan Bay (CVE 76)	Kaiser, Vancouver	September 2, 1943	December 11, 1943	January 18, 1944	Stricken August 1959; scrapped 1960
Marcus Island (CVE 77)	Kaiser, Vancouver	September 15, 1943	December 16, 1943	January 26, 1944	Stricken July 1959; scrapped 1960
Savo Island (CVE 78)	Kaiser, Vancouver	September 27, 1943	December 22, 1943	February 3, 1944	Stricken September 1959; scrapped 1960
Ommaney Bay (CVE 79)	Kaiser, Vancouver	October 6, 1943	December 29, 1943	February 2, 1944	Sunk January 1945
Petrof Bay (CVE 80)	Kaiser, Vancouver	October 15, 1943	January 1, 1944	February 18, 1944	Stricken June 1958; scrapped 1959
Rudyerd Bay (CVE 81)	Kaiser, Vancouver	October 24, 1943	January 12, 1944	February 25, 1944	Stricken August 1959; scrapped 1960
Saginaw Bay (CVE 82)	Kaiser, Vancouver	November 1, 1943	January 19, 1944	March 2, 1944	Stricken August 1959; scrapped 1960
Sargent Bay (CVE 83)	Kaiser, Vancouver	November 8, 1943	January 31, 1944	March 9, 1944	Stricken June 1958; scrapped 1959
Shamrock Bay (CVE 84)	Kaiser, Vancouver	November 15, 1943	February 4, 1944	March 15, 1944	Stricken June 1958; scrapped 1959
Shipley Bay (CVE 85)	Kaiser, Vancouver	November 22, 1943	February 12, 1944	March 21, 1944	Stricken March 1959; scrapped 1961
Sitkoh Bay (CVE 86)	Kaiser, Vancouver	November 23, 1943	February 19, 1944	March 28, 1944	Stricken April 1960; scrapped 1961
Steamer Bay (CVE 87)	Kaiser, Vancouver	December 4, 1943	February 26, 1944	April 4, 1944	Stricken March 1959; scrapped 1959
Cape Esperance (CVE 88)	Kaiser, Vancouver	December 11, 1943	March 3, 1944	April 9, 1944	Stricken March 1959; scrapped 1961
Takanis Bay (CVE 89)	Kaiser, Vancouver	December 16, 1943	March 19, 1944	April 15, 1944	Stricken August 1959; scrapped 1960
Thetis Bay (CVE 90)	Kaiser, Vancouver	December 22, 1943	March 16, 1944	April 21, 1944	Stricken March 1964; scrapped 1966
Makassar Strait (CVE 91)	Kaiser, Vancouver	December 29, 1943	March 22, 1944	April 4, 1944	Stricken September 1958; wrecked 1961
Windham Bay (CVE 92)	Kaiser, Vancouver	January 1, 1944	March 29, 1944	May 3, 1944	Stricken February 1959; scrapped 1961
Makin Island (CVE 93)	Kaiser, Vancouver	January 12, 1944	April 5, 1944	May 9, 1944	Stricken July1946; scrapped 1947

Lunga Point (CVE 94)	Kaiser, Vancouver	January 19, 1944	April 11, 1944	May 14, 1944	Stricken April 1960; scrapped 1966
Bismarck Sea (CVE 95)	Kaiser, Vancouver	January 31, 1944	April 17, 1944	May 20, 1944	Sunk February 1945
Salamaua (CVE 96)	Kaiser, Vancouver	February 4, 1944	April 22, 1944	May 26, 1944	Stricken September 1946; scrapped 1947
Hollandia (CVE 97)	Kaiser, Vancouver	February 12, 1944	April 28, 1944	June 1, 1944	Stricken April 1960; scrapped 1960
Kwajalein (CVE 98)	Kaiser, Vancouver	February 19, 1944	May 4, 1944	June 7, 1944	Stricken April 1960; scrapped 1961
Admiralty Islands (CVE 99)	Kaiser, Vancouver	February 26, 1944	May 10, 1944	June 13, 1944	Stricken August 1946; scrapped 1947
Bougainville (CVE 100)	Kaiser, Vancouver	March 3, 1944	May 16, 1944	June 18, 1944	Stricken June 1960; scrapped 1960
Mantanikau (CVE 101)	Kaiser, Vancouver	March 10, 1944	May 22, 1944	June 24, 1944	Stricken April 1960; scrapped 1960
Attu (CVE 102)	Kaiser, Vancouver	March 16, 1944	May 27, 1944	June 30, 1944	Stricken July 1946; scrapped 1949
Roi (CVE 103)	Kaiser, Vancouver	March 22, 1944	June 2, 1944	July 6, 1944	Stricken May 1946; scrapped 1947
Munda (CVE 104)	Kaiser, Vancouver	March 29, 1944	June 8, 1944	July 8, 1944	Stricken September 1958; scrapped 1960

The Kaiser-built ships shared similar dimensions to those of the Bogue class, but featured improved streamlining, a square stern, and two boiler uptakes on each side of the flight deck. The aircraft-handling facilities on the new ships virtually mirrored those on the Bogue class. The flight deck was 477ft long and 108ft wide. These ships were fitted with two elevators, nine arresting wires, three crash barriers, and a single catapult. The size of the hangar deck was enlarged to 257ft between the elevators and its utility enhanced by not incorporating the ships' sheer.

The crush of wartime production meant that no turbines or diesels were available to power these ships. Instead, old-fashioned reciprocating engines were used. Each generated 9,000ihp and drove one of the two shafts. Design speed was 19kts, but *Casablanca* made almost 21kts on trials. The engine rooms were not located together, which offered increased protection from a single torpedo hit. The ship was very maneuverable with a tactical diameter of only 540yds. These ships were the fastest and most maneuverable USN escort carriers. The extra speed of even a few knots was important to sustain flight operation in low-wind conditions.

Armament

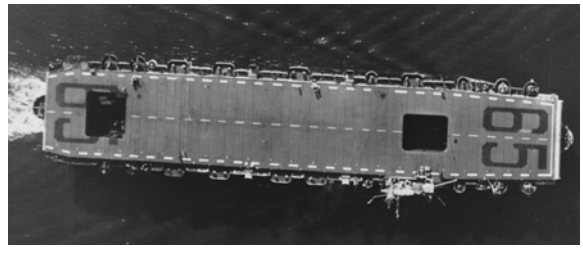
These carriers were inadequately armed with only one 5in/38 gun on the stern, 16 40mm guns on eight mounts and 20 20mm guns in single mounts. When the kamikaze threat emerged in October 1944, this shortcoming became a real issue.

BELOW LEFT

Tripoli, seen here in April 1944, was one of the few Casablanca-class ships to see combat duty in the Atlantic theater. Commissioned in October 1943, the ship arrived in the Atlantic in February 1944 and was active in the South Atlantic until October, conducting ASW operations without recording a U-boat kill. *Tripoli* returned to the Pacific in January 1945, and was used as an aircraft ferry and training ship until the end of the war. (Naval History and Heritage Command)

BELOW RIGHT

This overhead view of *Wake Island* on November 9, 1944 in Hampton Roads shows very clearly the location of the ship's elevators and armament. Note the 5in/38 gun on the stern, the two twin 40mm mounts on each quarter, and the single 20mm mounts along the flight deck. *Wake Island* was one of the few escort carriers to see action in both theaters during the war. In June and July 1944, she conducted ASW operations in the Atlantic accounting for one U-boat. In 1945, she participated in combat operations in the Philippines and in the Iwo Jima and Okinawa invasions, suffering kamikaze damage on April 3. (Naval History and Heritage Command)



ABOVE LEFT
Fanshaw Bay was commissioned in December 1943 and is shown transporting aircraft on January 17, 1944. Among the planes parked on her flight deck are US Army Air Corps A-20, P-38, and P-47 aircraft. The ship was present at the invasions of Saipan and Leyte, and was damaged on both occasions. (Naval History and Heritage Command)

ABOVE RIGHT
Cape Esperance photographed at Pearl Harbor while operating as an aircraft transport during the mid-1950s. Visible on the flight deck are AD Skyraiders, F2H Banshees, and Air Force F-100 Super Sabres. (Naval History and Heritage Command)

Wartime Service and Fate

Only five of these ships served in the Atlantic, with *Guadalcanal* being the most famous ship of the entire class by virtue of her role in the capture of German U-boat *U-505*. Of the 45 which served in the Pacific, all but 18 saw combat. The ships deployed in combat roles were heavily engaged in every invasion of the war, from the Gilberts operation in November 1943 until the end of the war. Five were sunk (one by submarine attack, one from naval gunfire, and three by kamikaze attack) and 12 were damaged, all but three from kamikaze attack. As many as 18 ships of this class served exclusively or almost exclusively in the Pacific on ferrying or training duties.

Following the war, 11 ships were taken out of service and quickly scrapped. The 34 surviving ships were retained in reserve, but few ever saw service again. Five ships – *Corregidor*, *Tripoli*, *Sitkoh Bay*, *Cape Esperance*, and *Windham Bay* – were used as aircraft transports in the 1950s. *Thetis Bay* had an interesting postwar career. In 1955, she was converted into the first assault helicopter transport to deploy Marines ashore by helicopter. In 1959, she was redesignated as an amphibious assault ship and served in this capacity until being removed from service in 1964.

F

St LO ATTACKED BY KAMIKAZE

The beginning of the Japanese kamikaze offensive is marked by the October 25, 1944 assault on the force of USN escort carriers operating off Samar. The first suicide attack was conducted against Taffy 1, which resulted in two escort carriers being damaged. This initial action did not impress some of the Americans who witnessed it, but the next attack against Taffy 3 demonstrated the kamikaze's destructive potential. The last aircraft to make its dive, an A6M5 "Zero" fighter, made a near-perfect attack. It initially dove on *White Plains*, but when it was damaged by antiaircraft fire, it diverted to *St Lo*. The escort carrier's antiaircraft fire was ineffective, and the Zero made a right turn at low altitude to approach *St Lo* from astern. Coming over the flight deck, the suicide pilot dropped his bomb on the stern of the carrier and then crashed his Zero on the flight deck. As seen in this view, the crash prompted a huge fireball. The Zero skidded up the flight deck and off the bow. The resulting fire on the flight deck was quickly extinguished, but the bomb penetrated to the hangar deck and exploded above aircraft being refueled and rearmed. The fire could not be contained and led to a series of explosions which forced the ship to be abandoned. This overhead view of *St Lo* shows the standard Casablanca-class armament of one 5in/38 single mount on the stern, two twin 40mm mounts on each quarter placed at flight deck level, and 20 single 20mm guns positioned around the flight deck.

Makassar Strait was commissioned in April 1944 but spent the entire war as an aircraft transport. Stricken in September 1958, the ship was employed as a target ship at the Pacific Missile Range. The former CVE met her end in April 1961 when she ran aground; this photograph is from January 22, 1963 and shows the ship breaking up on San Nicholas Island, California. (Naval History and Heritage Command)

Casablanca-Class Specifications	
Displacement	Standard 8,200 tons; Full 10,900 tons
Dimensions	Length 512ft 3in; beam 65ft 2in; draft 20ft 9in
Propulsion	4 boilers and reciprocating engines generating 9,000ihp on 2 shafts; maximum speed 19kts
Range	10,200nm at 15kts
Crew	860

The Commencement Bay Class

Design and Construction

For its last class of escort carriers, the USN got to pick the kind of CVE it wanted. The obvious answer was a design with the size and capabilities similar to those found in the Sangamon class. The new design was based on an oiler hull and approved on December 1, 1942. Twenty-three ships were approved and all assigned to the Todd-Pacific Yard in Tacoma, Washington. The lead ship, *Commencement Bay*, was not commissioned until November 27, 1944, so this meant that only three of the 19 ships actually completed saw combat before the end of the war. Altogether, 27 ships of this class were ordered from Todd and eight from Kaiser. Of the 19 ships completed, two were never commissioned. Work on another four was suspended in August and the ships broken up. Twelve more were canceled at the same time without work ever having begun.

Commencement Bay-Class Construction

Ship	Built at	Laid down	Launched	Commissioned	Fate
Commencement Bay (CVE 105)	Todd, Tacoma	September 23, 1943	May 4, 1944	November 27, 1944	Stricken January 1971; scrapped 1972
Block Island (CVE 106)	Todd, Tacoma	October 25, 1943	June 10, 1944	December 30, 1944	Stricken July 1959; scrapped 1960
Gilbert Islands (CVE 107)	Todd, Tacoma	November 29, 1943	July 20, 1944	February 5, 1945	Converted to communications ship and renamed *Annapolis*; Stricken October 1976; scrapped 1979
Kula Gulf (CVE 108)	Todd, Tacoma	December 16, 1943	August 15, 1944	May 12, 1945	Stricken September 1970; scrapped 1971

Cape Gloucester (CVE 109)	Todd, Tacoma	January 10, 1944	September 12, 1944	March 5, 1945	Stricken April 1971; scrapped 1971
Salerno Bay (CVE 110)	Todd, Tacoma	February 7, 1944	September 29, 1944	May 19, 1945	Stricken June 1961; scrapped 1962
Vella Gulf (CVE 111)	Todd, Tacoma	March 7, 1944	October 19, 1944	August 9, 1945	Stricken December 1970; scrapped 1971
Siboney (CVE 112)	Todd, Tacoma	April 1, 1944	December 9, 1944	May 14, 1945	Stricken June 1970; scrapped 1971
Puget Sound (CVE 113)	Todd, Tacoma	May 12, 1944	November 30, 1944	June 18, 1945	Stricken June 1960; scrapped 1962
Rendova (CVE 114)	Todd, Tacoma	June 15, 1944	December 28, 1944	October 22, 1945	Stricken April 1971; scrapped 1971
Bairoko (CVE 115)	Todd, Tacoma	July 25, 1944	January 25, 1945	July 16, 1945	Stricken April 1960; scrapped 1961
Badoeng Strait (CVE 116)	Todd, Tacoma	August 18, 1944	February 15, 1945	November 14, 1945	Stricken December 1970; scrapped 1972
Saidor (CVE 117)	Todd, Tacoma	July 30, 1944	March 17, 1945	September 4, 1945	Stricken December 1970; scrapped 1971
Sicily (CVE 118)	Todd, Tacoma	October 23, 1944	May 14, 1945	February 27, 1946	Stricken July 1960; scrapped 1961
Point Cruz (CVE 119)	Todd, Tacoma	December 4, 1944	May 18, 1945	October 16, 1945	Stricken July 1970; scrapped 1971
Mindoro (CVE 120)	Todd, Tacoma	January 2, 1945	June 27, 1945	December 4, 1945	Stricken December 1959; scrapped 1960
Rabaul (CVE 121)	Todd, Tacoma	January 2, 1945	July 14, 1945	Never	Completed and not commissioned; stricken July 1971; scrapped 1972
Palau (CVE 122)	Todd, Tacoma	February 19, 1945	August 6, 1945	January 1, 1946	Stricken April 1960; scrapped 1960
Tinian (CVE 123)	Todd, Tacoma	March 20, 1945	July 5, 1945	Never	Completed and not commissioned; stricken January 1970; scrapped 1971

Bastogne (CVE-124), *Eniwetok* (CVE-125), *Lingayen* (CVE-126), and *Okinawa* (CVE-127) were suspended on August 12, 1945 and scrapped; CVE-128-139 was canceled on August 11, 1945.

The class appeared externally similar to the Sangamon-class ships and shared similar dimensions. There were some important differences, such as a flight deck and elevators able to handle up to a 17,000lb aircraft instead of the previous 14,000lb. The elevators operated more quickly and two catapults were fitted. The width of the island was increased.

The design speed of 19kts was achieved by steam turbines able to generate 16,000shp. Many ships exceeded the design speed on trials. The engine rooms were separated to increase survivability. Two more transverse

BELOW LEFT
Kula Gulf underway with Marine Corps F4U Corsair fighters between September 1951 and January 1953, when she was used as a training carrier for Marine pilots. Four CVEs saw combat in the Korean War with an all-Marine air group. Similar operations were planned in 1945, but the war ended before they could be implemented. (Naval History and Heritage Command)

BELOW RIGHT
Salerno Bay was commissioned in May 1945 and trained with a Marine air group. However, she did not see combat before the end of the war and was removed from service in late 1947. She returned to service in June 1951 and was active in the Atlantic and Mediterranean until February 1954. (Naval History and Heritage Command)

Gilbert Islands was one of the few Commencement Bay-class escort carriers to see combat during the Pacific War. Reactivated during the Korean War, she was decommissioned again in January 1955. In 1964, she was recommissioned and renamed *Annapolis* after being converted to a communications ship and is shown here in New York Harbor on June 12, 1964. Note the array of large communications antennas on the flight deck. (Naval History and Heritage Command)

bulkheads were fitted for extra strength and better subdivision was incorporated.

Armament

The armament on these ships was greatly expanded, addressing the shortcomings of every previous CVE class. Two 5in/38 single guns were fitted on the stern. The antiaircraft suite was much improved. Since the 40mm gun was better at handling kamikaze attacks, and the quad 40mm mount was favored in particular, three quad mounts were fitted (one on the bow and two on the fantail), and another 12 40mm twin mounts were fitted in gun tubs mostly below the flight deck level. Twenty single 20mm guns were fitted along the flight deck in groups of five.

Wartime Service and Fate

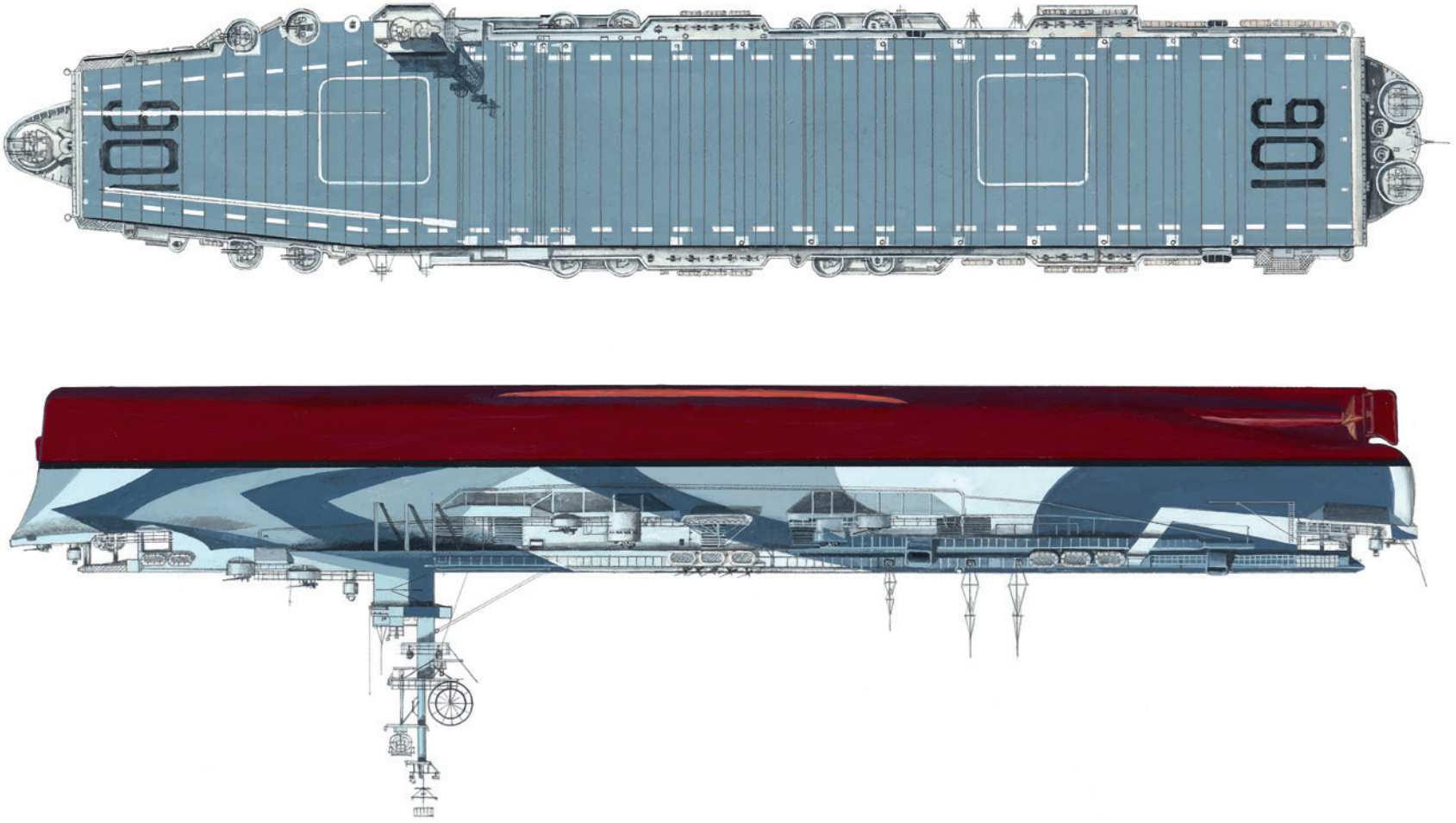
Only three ships of this class – *Block Island* (named after the escort carrier lost in 1944), *Gilbert Islands*, and *Cape Gloucester* – reached the Pacific in time to see action in World War II. *Saidor* and *Bairoko* participated in the postwar atomic bomb tests in the Central Pacific. Since they were the USN's most capable escort carriers, many had postwar careers of note. Five ships – *Sicily*, *Badoeng Strait*, *Rendova*, *Bairoko*, and *Point Cruz* – saw action in the Korean War. The first four ships embarked two squadrons of US Marine Corps F4U Corsairs and flew ground support missions; the last ship embarked a squadron of Avengers for ASW duties. Another seven ships were active during the Korean War period on various duties, mostly in the Atlantic, with *Siboney* and *Palau* used as ASW carriers. Two ships, *Kula Gulf* and *Point Cruz*, were returned to service during the Vietnam War and assigned duties to transport aircraft to Southeast Asia. *Gilbert Islands* was converted into a communications ship, renamed *Annapolis*, and supported US forces deployed to Vietnam.

Commencement Bay-Class Specifications	
Displacement	Standard 11,373 tons; Full 24,275 tons
Dimensions	Length 557ft 1in; beam 75ft; draft 32ft 2in
Propulsion	4 boilers and geared turbines generating 16,000shp on 2 shafts; maximum speed 19kts
Range	8,320nm at 15kts
Crew	1,066

G

THE COMMENCEMENT BAY CLASS

These starboard-side and overhead profiles show *Block Island* – one of the few Commencement Bay-class ships to see action in the Pacific before the end of the war. The ship was named after the Bogue-class ship which was torpedoed and sunk by a German U-boat in 1944. The ship is in the Ms 32/18A scheme. The hull shape is based on a tanker design as is evident in the profile view. The island has been enlarged compared to previous USN escort carriers, and the mast above carries the SK-2 radar (the large circular radar) and an SPS-4/SG radar on the leading edge of the mast and the YE aircraft homing beacon radar on top. The antiaircraft armament has been dramatically upgraded and includes a quad 40mm mount on the bow and two on the fantail. Immediately forward of the aft 40mm quad mounts are two single 5in/38 single mounts, which can be seen on the profile view. The ship also carries 12 twin 40mm mounts, most of which were placed on sponsons below the level of the flight deck. Around the flight deck are 20 single 20mm guns in four groups.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ANALYSIS AND CONCLUSION

The contribution of the USN's escort carriers during World War II was significant, but has also been largely forgotten. The majority of American escort carriers served in the Pacific and it was here that their impact was most important. They proved supremely versatile, performing in their originally envisioned roles of convoy escort and providing ground support during amphibious invasions. They also served in other roles which were not expected, such as providing air defense for amphibious invasions and even as the centerpiece of a large fleet engagement during the Battle of Leyte Gulf in October 1944. Not surprisingly, since they were not designed for air defense or fleet actions, they were not entirely successful in those roles. Nevertheless, their presence at all major amphibious operations after November 1943 provided adequate air defense against low-level Japanese attacks, which allowed the Fast Carrier Task Force to be directed at targets to degrade Japanese air power at an operational level. In the Atlantic, USN escort carriers proved very useful in the overall context of Allied ASW efforts against the German U-boat threat.

Another key attribute of these ships was their basic cheapness which allowed them to be produced in large numbers. Operating together, escort carriers provided significant numbers of aircraft for a variety of missions. A total of 77 escort carriers were commissioned into USN service during the war. In addition, American shipyards built 38 escort carriers for the RN. In comparison, the Imperial Japanese Navy built a total of five escort carriers, and these were mostly used for aircraft transport duties. When used to escort convoys, they proved ineffective in the ASW role and four were sunk by USN submarines in 1943–44.

The evolution of USN escort carrier design eventually produced a ship which was virtually as capable as a light flight carrier with the exception of slower speeds. The initial escort carrier, *Long Island*, possessed limited capabilities, but proved the viability of the entire escort carrier concept and its utility in the basic aircraft transport role. The Bogue class proved adequate in its intended role as an ASW hunter-killer carrier. The similar Casablanca class faced a higher threat environment in the Pacific. While the mass production aspects of this class allowed the USN to include large task groups of escort carriers in major amphibious operations, this front-line duty revealed the deficiencies of the Casablanca class and of escort carriers in general. The lack of protection was glaringly obvious when *Liscome Bay* was torpedoed and sunk with massive personnel casualties off the Gilbert Islands in November 1943. Fortunately for the USN, that was the only occasion when a CVE was exposed to torpedo damage in the Pacific War. The real danger to escort carriers operating in the Pacific was from air attack. Operating in groups, escort carriers could cope with the limited threat from conventional Japanese air attack, but against kamikaze attack the vulnerabilities of the escort carriers were fully revealed. Even in groups, escort carriers could not generate an adequate CAP, and singly a

Because of their small aircraft complements, escort carriers had to operate in groups to be effective. In this view, a group of CVEs practice formation and maneuver exercises in Hawaiian waters on January 13, 1944. The photograph was taken from *Manila Bay* and the ships astern are *Coral Sea*, *Corregidor*, *Natoma Bay*, and *Nassau*; all but the latter are Casablanca-class ships. The first three saw action in the invasion of the Marshalls shortly thereafter. Even operating in groups, escort carriers remained vulnerable since they were allocated weak escorts. (Naval History and Heritage Command)

CVE did not possess adequate antiaircraft capabilities to defend against a suicide attacker. Worst of all, when struck, a CVE often did not have the damage control capabilities to cope with a hit in a vulnerable area. As a result, three CVEs were lost to kamikazes and 16 damaged.

Instead of an escort carrier with limited capabilities, the USN really wanted an escort carrier with capabilities approaching those of a real carrier. The Sangamon class came close to this aspiration, and its ships were used as de facto fleet carriers early in the war. The Sangamons proved to be superior escort carriers with their expanded air groups and a greater ability to survive damage. The Commencement Bay class was the ultimate USN escort carrier, which was virtually a light carrier in terms of combat capability. They remained viable carriers until the Korean War when the arrival of jet fighters and heavier ASW aircraft finally rendered them obsolete in a carrier role.

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